**CRUISE LOG**

**EX1504L3**

**28 August 2015 – 3 September 2015**

**INSTRUCTIONS:**

PLEASE INCLUDE FOLLOWING DURING EACH OF YOUR WATCHES:

Mapping log (All information written down in rough log [Green book])

Log what time you assume the watch – **All times UTC**

WX every three hours

Settings changes

Data quality trends

BIST times/filenames, reason for running

XBT/CTD casts

**Key**

PM – Ping Mode

ACM – Angular Coverage Mode

SB – Single Beam

MB – Multibeam

VD – Very Deep

AD – Along Direction

WX – Weather

STBD - Starboard

ED – Extra Deep

WCD – Water Column Data

BBS – Bottom Back Scatter

**DD MMM YYYY**

0152 Example entry

**28 August 2015**

1630 Turned on TRU to warm up

~2115 Pinging Kundsen

2129 SVP cast 001 applied to line 0000

2131 Logging MB data in SIS, max angles 75\*, along direction -2.0, spike filter medium

2137 Penetration filter set to weak in SIS

2139 Pinging EK60

2146 Started logging EK60 and SBP data

2239 All sonars secured

2241 BIST #2 ran, all tests passed

**29 August 2015**

0352 EM302 start pinging, Raymond and Sowers on watch

0355 EK60 logging

0400 Kudsen logging

0403 EM302 start logging

0437 All sonars secured, entering Humpback Whale Sanctuary on Penguin Bank

0554 SIS pinging, tx power -20

0604 All systems logging

0715 Nalley and Raymond on watch

0725 XBT #002 applied in SIS, new MB line 006 started

0804 Changed SBP range =500, new file

0807 SIS penetration filter off, max angles 70\*, along direction -3.0

0828 SIS max angles 65\*

0839 Still having artifacts in SIS, along direction -4.0, max angles 0/65\*, penetration filter medium

0845 SBP gain 30dB

0901 SBP pulse 1m gain 32

0904 Sync mode is on Internal on the Knudsen! Stopped line, switched to external, started new line.

0906 SBP gain to 34

0909 SIS max angles 70/68\*

0910 SBP gain back to 32dB

0918 SBP pulse 0.5, gain 30, SIS max angles 68/65\*

0928 SIS max angles 70\*

0936 SIS max angles 75/73\*

0937 SBP gain 32

0947 SIS max angles 70\*

1014 SBP range 500, new line

1017 EK60 range to 2,000, new line, SBP gain 36, pulse 2

1031 SBP gain 38

1034 SBP gain 40, pulse 4ms

1045 SIS along direction -4.5, penetration filter weak, spike filter strong, range gate small

1049 EK60 range 3000, new line; SBP range 1000, power 2, new line

1050 SIS spike filter back to medium, SIS; EK60 range 4000 new line

1059 SIS spike filter medium; XBT cast #003 applied in SIS, new MB line 0010 started

1113 Penetration filter will not let me select off, the drop down is not working, tried closing and re-opening and switching the tear-off, penetration filter is on weak, but won’t drop-down to turn off

1117 SBP range 1000, new line started

1118 NONE of the drop-downs under the Filter and Gains tab will drop down in SIS

1123 Too many artifacts to ignore and clean later, stopped logging and pinging, re-started SIS

1124 Re-started pinging SIS

1129 Re-started logging SIS, spike filter medium, range gate small, along direction -4.0\*, ping mode very deep, max angles 43\*

1132 SIS max angles 45\*

1203 SIS ping mode deep, range gate normal, max angles 45\*

1211 SIS max angles 45/52\*

1216 SBP power to 2, pulse 2

1221 SBP power 1, SIS max angles 50\*

1228 SIS max angles 65/55\*

1235 SIS max angles 65/60\*

1248 SIS max angles 75/65\*

1326 SIS max angles 45\*, SBP pulse 4

1331 SBP power 2

1334 SIS max angles 55/45\*, penetration filter weak

1342 SIS max angles 65/50\*, SBP power 1, and back to 2

1347 Penetration filter in SIS off

1353 SIS range gate small, max angles 55\*; SBP power 1, gain 42

1400 Added lines to swath angle surface, then computed TPU and made a Cube surface

1401 SIS max angles 63/60\*

1417 SIS max angles 70/68\*

1504 SBP gain 36; EK60 range 2500, started new line

1508 SIS max angles 70/68\*

1552 Bridge called to secure Sonars

1553 Sonars secured

1600 BIST #3 ran, all passed

**30 August 2015**

0310 Sowers and Raymond on watch. Started SIS, 302 in soft start

0342 XBT #4 collected

0357 XBT #4 applied to line 17 and began logging MB

0405 EK60 ping and record

0408 Knudsen logging

0413 new line 0018 for turn

0433 SBP was on internal trigger and causing interference, fixed it

0503 new line 0020 for turn

0537 noticing interference on EM302

0645 reduced SBP pulse to 4ms

0658 reduced SBP pulse to 2ms, gain to 37dB

0728 changed SBP phase, started new line

0751 New line after turn

0827 XBT cast #05 applied in SIS, new MB line 025 started

0923 SBP pulse 4, gain 40

0927 SBP stopped during turn and ridge

0930 SBP started new line

1001 SIS red screen

1043 SBP power 2

1129 SBP gain 24

1153 XBT #06 applied to line 0029 started

1224 SBP gain 40

1300 Weather is picking up a little

1348 SBP power 2

1352 SBP gain 38

1354 SIS max angles 60/60\*

1415 SBP pulse 2

1434 SBP power 1

1441 SBP lost bottom after going to power 1, back to power 2, SBP having trouble on the ridge

1446 SIS max angles 70/70\*

1532 EK60 range to 2000, started new line, max angles moved at some point to 75/75\*

1547 SBP pulse 2, power 1

1553 All sonars secured

1608 BIST #5 ran, all passed

August 31, 2015

0300 All BIST pass, Sowers and Raymond on watch

0337 XBT Cast

0343 Applied SVP cast #7 to line 35

0344 Transiting at 11 knots, max angles 65/65

0352 max angles 70/70

0415 SBP new line, doesn’t like topography

0459 EK60 range lowered to 5000 for file

0506 EM302 tilt from -4 to -1

0509 change SBP phase, new file

0520 slowing speed for engineering

0546 SBP phase change, dB=38

0555 tilt to zero on 302

0558 max angles 35/35

0632 SBP range to 500, new file

0641 SBP power to 3, gain =32

0657 max angles 32to clean outer beam artifact

0711 SBP pulse to 16, gain 32dB

0727 SBP range to 200, gain 38

0737 SBP phase change, new file

0900 SBP phase shift, new file

0907 SBP lost bottom tracking at 4400m

0911 SBP range increased to 500

0936 Max angles 40/40

0947 302 lost bottom, somehow changed to shallow ping mode, put back in Auto

0951 New SBP file, phase shift, max angles 50/50

1000 0043 turn line begin

1004 SVP # applied to line 43

1015 Nalley and Raymond on watch; End 302 turn 43, start 44

1022 SBP pulse to 4ms

1046 SBP pulse 2, gain 38

1117 EK60 change range to 3000, started new line

1129 SBP pulse 4, gain 40

1218 SIS along direction -0.5 then -1.0 due to “horn” artifacts

1230 Nalley on watch

1231 SIS turn line is 46, started new MB line 47

1248 SIS Max angles 65/65\*

1308 SBP pulse 2, gain 38

1509 EK60 range 3500, started new line

1533 EK60 range 4000, new line; SBP pulse 4, gain 40

1558 SIS along direction to -1.5

1604 SBP losing bottom on ridge, secured SBP

1615 EK60 secured

1616 EM302 secured, BIST running

1625 BIST 07 saved, all passed

**1 September 2015**

0149 All BIST passed

0320 turned off soft start, logging

0326 conducting XBT#9

0335 XBT #9 applied to line 54, pinging/logging EK60, SBP

0343 SBP new file, power=3, pulse 8, gain 40

0540 SBP new file, phase change

0558 SBP new file, phase change

0613 Changed 302 mode to “Deep” for backscatter survey, new SBP file

0615 Max angles 55/55\*

0621 New line EM302 0057 for turn

0644 Max angles 50/50\*

0702 SBP power down to 2, phase shift

0700 Nalley and Raymond on watch

0719 SIS max angles 55/60\*

0724 SIS along direction -2.0, max angles 50/55\*

0741 SIS ma angles 48/50\*

0745 SBP pulse 4, then 2, gain 38

0750 SBP pulse 4

0758 SBP gain 40

0850 SBP new file, phase shift

0852 EK60 range to 4500, new line started

0902 XBT cast #10 applied in SIS, new MB line 0060 started

0935 SIS along direction -3.0, max angles 40\*

1007 SIS along direction -3.5

1019 SBP phase shift

1022 SBP phase shift, pulse up

1032 SBP phase shift, pulse down

1034 SIS max angles 50\*, SBP pulse 2, gain 38

1037 SIS max angles 55\*, SBP gain 36

1038 SBP pulse 4

1042 SIS max angles 60\*

1044 SIS max angles 65\*

1112 SBP pulse up 8.0, gain 40

1126 SIS ping mode auto

1145 EK60 range to 5500m

1238 XBT #11 applied in SIS, new MB line #064 started

1240 Nalley on watch

1248 SBP gain 42

1404 SIS max angles 45\*

1418 SIS max angles 40\*

1514 SIS max angles 45\*

1515 SIS max angles 55\*

1603 SBP pulse up 4.0, gain 40

1606 SBP and EK60 secured

1610 EM302 secured, BIST running

1623 BIST #09 saved, all green

**2 September 2015**

0250 All BIST pass

0303 Soft Start EM302

0326 Soft Start ended

0329 Ship engineering test, 175 RPM for 10 min.

0337 Conducting XBT

0346 XBT #12 applied to line 0068

0349 EK60 pinging and recording, SBP pinging

0351 SBP recording

0400 End turn line 0068, Start line 0069, moved line 500m to starboard (SE) for overlap

0406 SBP phase shift

0408 SBP pulse 16.00

0412 EK60 range adjust

0413 SIS max depth to 5000

0416 SBP phase and pulse adjust

0424 SBP pulse 32.00

0431 SBP pulse 16.00

0443 SBP pulse 32.00

0450 SBP pulse 64.00

0456 SBP power to 3

0505 SBP phase shift, power to 2

0513 asked bridge to shift 500m to port

0517 SBP phase shift

0524 SIS ping mode to Deep, new line 0071

0526 SBP phase shift

0536 EK60 range 4000

0553 SBP phase shift

0605 SBP phase shift

0618 SBP phase shift

0622 SBP phase shift

0636 SBP phase shift

0648 EK60 range 4500

0655 SIS too deep for Deep mode, getting holes, switched to Auto. Started line 0073

0659 SBP pulse to 8

0715 Conducting XBT

0727 XBT 13 applied to line 0074

0735 SIS switched to Deep mode

0737 SBP phase shift

0748 SBP power to 3

0700 Nalley, Sowers, Raymond on watch

0805 SBP pulse 2, power 2

0806 EK60 range 2500, new line

0832 SBP phase shift

0838 EK60 range 4500, new line

0840 SBP phase shift

0856 SBP phase shift

0907 SIS 3600, changed ping mode to Very Deep, will change back to deep before next seamount

0917 EK60 range 5000, new line

0928 SIS along direction -0.5

1027 SIS Ping mode to Deep for Backscatter of Seamount ~3347m

1041 SIS along direction -1.5, finally settled on Max angles 32/63\*

1108 SIS along direction -2.0

1122 SBP phase shift

1136 SBP phase shift

1201 XBT – going to apply XBT #14 in SIS, XBT 12 was the sound speed profile being used. Need to check line 0074-0079 to see what sound speed profile they were using. Question on whether or not XBT #13 was applied in SIS

1205 XBT #014 applied in SIS, new MB line #080 started

1208 SIS max angles settled on 50/53\*

1215 Nalley on watch

1241 4046m, really tried to keep the ping mode in Deep, but the EM302 was having trouble finding bottom on Deep mode in 4000m of water, set Ping mode to Very deep

1242 Re-thought strategy, ping mode back to Deep since the priority is Backscatter.

1243 Advanced line in SIS, line 0081 was 10 minutes, during a turn, in Deep ping mode, then Very Deep, then back to Deep. Don’t want to add this line to the backscatter mosaic.

1248 Depth is 4128. Data in Deep mode is not great, asked Bridge to move NW or to starboard by 500m so that we will be in a little shallower water without having to change ping mode. Measured coverage in meters in Hypack

1254 Advanced the line in SIS, data is starting to look better. Bridge is continuing to move in until we reach 3300m at nadir so that we can have a backscatter mosaic with good data and the same settings.

1316 Advanced line in SIS to MB line 085, steadying up on a heading with nadir at around 3300m. As the Backscatter mosaic as the priority, I believe this was the best course.

1322 SIS max angles settled on 32/53\*

1353 SBP pulse 8

1508 SBP power 2

1518 Tried checking on the SVP file for line 74-79, the file in HDCS under Processed data won’t open because the computer doesn’t have Adobe? The detailed line query just says \SVP when asking for the SVP file, so I will look more tomorrow about how to find which sound speed profile was applied to these lines.

1602 Secured EK60 and SBP

1604 Secured EM302, BIST running

1613 BIST #11 saved, all passed

**3 September 2015**

0113 Started SiS

0115 Running BISTs

0203 302 Started in soft start

0234 EK60 logging. SBP Pinging. SIS soft start off.

0235 SBP logging

0241 SIS logging line 0090

0249 Conducting XBT #15

0257 Applied Xbt #15 to new line 0091. Line 90 had old XBT cast applied

0258 EK60 range to 5000. SBP phase shift.

0302 Max Angles 40/40, doing 10.5-11 knots

0307 SBP changed power from 2 to 3

0322 Had bridge slow to 10-10.5 knots. Max angles 33/33

0355 Asked bridge to slow to 8 knots for turn and survey of unmapped patch.

0455 SIS along track direction -1.0.

0521 Boat speed up to 10-10.5

0537 SBP range to 500

0547 SBP range to 1000

0606 SIS max angle to 40/40

0700 Raymond and Nalley on watch

0720 SBP gain 40, back to 34

0755 XBT #16 applied in SIS, new MB line #0097 started

0837 EK60 range to 5500, started new line

0843 SBP gain 36

0900 SIS Starboard angle to 30

1013 “Horns” artifact, along direction -1.0 in SIS

1014 SIS max angles to 35\*

1019 SBP range 500, started new line

1020 SIS along direction -2.0

1059 SBP range 1000

1131 SBP phase change

1136 SIS max angles 40/40\*, along direction -2.5\*

1156 XBT#17 applied in SIS, new MB line 0102 started

1201 EK60 range to 3500m, started new line

1203 SBP phase shift

1209 SIS max angles 35/54\*, along direction -3.0

1212 SIS max angles 45/65\*

1214 SIS max angles 55/70\*, getting shallower fast

1219 SBP pulse 4, power 2

1234 SBP pulse 2, power 1

1241 SBP range 500, pulse 1, started new line

1249 EK60 range 1500, started new line

1250 SBP gain 34, SIS max angles 75/75\*

1316 EK60 range 800, started new line, -> looked like it was recording the second return

1318 SIS Penetration filter on weak, range gate small

1349 SIS max angles 70/70\*, penetration filter off, ping mode set to medium, trying to get good settings before backscatter targets

1352 EK60 giving a bottom depth of 935m, MB says 459m, took screen shot

1354 EK60 range 1300m, - EK60 fixed itself after it was able to see the second return

1434 SIS MB line 0105 has VERY interesting Backscatter, took screenshots

1445 Maybe something at the end of line 0105

1513 4 possible targets, screenshots taken, lines 0105-0107, Target #2 was 1600m to port and we were only getting 1300m on 75\* on the port side, so we don’t think we saw target 2

1515 Advanced line in SIS to #0108 as target area is complete

1520 Secured EK60 and SBP

1521 EM302 secured, BIST running

1527 BIST #14 complete, All passed

Complete EX1504L3