**CRUISE LOG**

**EX1402L1**

**February 24, 2014 – March 15, 2014**

**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

FEB 23

2030 ran all bist EX1402L1 – all green. At dock. Exported PU params.

FEB 24

1530 depart dock for transit to gomex. 2 all bists ran – all green.

1814 Conducting xbt#1

1836 logging to 0000; xbt 1 applied

1850 stopped and restarted pining t change survey name and correct storage folder

1900 new survey EX1402L1a

1907 start ek60 recording

1916 star recording Knudsen

2005 survey speed change to 7 kts due to engineering issues.

2010 MB cutoff angles changed to 50/50 in heavy seas to improve data quality

2044 conducting xbt 0002, applied to line 0001

2056 secured Knudsen in heavy seas, poor data quality

2100 Danielle and Derek on watch

2243 stop SIS to integrate SVP server (unsuccessful)

2248 start logging line 005

2347 start logging line 0006

0047 start logging line 007

0136 Bridge called: they will move around a fishing vessel in 7 minutes

0215 had to secure loose cargo

0226 SV profile differs too much from SV used – new XBT needed (red warning in SIS)

0239 changed max depth to 1500m we are near 1st waypoint

0250 secured EK60 – data quality too poor, > 7 deg rolls, and 75 deg pitch

0418 sea state 8-10’ swells

0448 call from bridge: ship has slowed and changed to a more agreeable course until waves lay down, then resume to planned line

0557 continue waiting for waves to lie down, ship speed 1-2 knots, heading 295 deg

0953 zigzag pattern due to rough seas

1037 XBT cast # 3

1300 Lindsay and Jackie on watch

1330 started EK60 and sub-bottom

1346 XBT #4 conducted

1401 XBT #4 applied to line 0020

1410 bridge called: moving south of track line to avoid fishing vessel

1448 start of line 0021

1548 start of line 0022

1611 all sonars secured – whale spotted within 750 m

1615 XBT #5 conducted

1622 pod of dolphins spotted within 750 m safety zone, sonars remain secure

1644 marine mammals out of safety zone > 15 min. Restarting all sonars, EM302, EK60, Knudson.

1647 start of line 0023

1747 start of line 0024

1757 XBT #5 applied to line 24

1838 Dolphin across bow, sonar secured.

1859 5mi starboard to avoid vessel/can’t see more than .5mi. Snowing, visibility low.

2035 Secure from drills.

2055 Restarting sonars- marine mammals seen >15min ago.

2100 Danielle and Derek on watch.

2107 Conducting XBT #6

2118 Started collecting line 0026. New SVP profile applied from XBT cast #6. Changed force depth to 116.

2122 Turned on logging/pinging for EK60 and Knudsen.

2137 Sped up to 9-9.5 kts to make Key West on time. Range on Knudsen has changed to 50m to get scale of plot better.

2218 0027 line started. SVP warning turned yellow. Some MB data dipped out because depth filter was set too shallow changed to 2000m.

2219 Subbottom TX pulse increased to 2 ms and power to 2 to re-find bottom.

2230 Veer for vessel traffic.

2243 Dolphins sighted within 750m- secured sonars.

2252 Bridge confirmed dolphins gone. Resumed recording- initial error with pinging so restarted again; line 0028 not usable. Began line 0029.

2310 Restart EK60 and Knudsen recording.

2324 XBT #7 completed.

2337 New SVP from XBT #7 completed.

2352 MB line 0030 started. SVP warning turned yellow.

FEB 25

0010 SVP warning in SIS turned red, then yellow

0052 MB line 0030 started

0152 MB line 0032 started

0252 XBT #8 completed

0302 New SVP (#8) applied to line 0033

0349 Broke line 0033, started line 0034 as a turn file (ship making sharp “S” turn to get to next waypoint). Note: Line 26- Danielle noticed “tire track” striping on both sides of nadir when processes this line in Caris. Meme thinks this is side lobe detection, we changed Along Direction tilt to 1.0degrees in SIS runtime parameters.

0409 Started line 0035 (Turn completed)

FEB 26

0550 XBT #9 completed

0609 Started line 37

0710 Started line 38

0840 XBT #10 cast aborted – radio deck not working

0844 XBT #11 cast completed, applied to line 39

0910 Started line 40

0925 Norfolk Canyon – shoaling from 300 fathoms to approximately 55 fathoms

0930 Briefly lost bottom trace (depth reading of 0m) on ER60 for approx. 1 min.

0938 Begin turn to starboard (loop) south of Norfolk Canyon

0946 End loop, back on trackline

0948 Adjust TX pulse on Knudsen to 1m/s as per SOP

1009 Start line #41

1109 Start line #42

1135 Stop pinging all systems – dolphins

1146 Second dolphin sighting – standing by

1154 Dolphin still in area, as well as multiple ship traffic. Skipping waypoints and continuing on trackline. Still standing by.

1219 Begin line #44 (no line 43).

1220 Traffic to starboard, EX parallel to line and slightly to port for traffic avoidance.

1225 Apply cast #12, line 44.

1300 Lindsay and Jacklyn on watch

1307 Noticed there is no wcd file for line 0042

1405 Secure sonar dolphins spotted

1412 Slowed to 5kts while mammals are around hoping to hit seeps with sonars on

1420 Speeding back up to 10kts

1421 Started pinging on EM302

1423 Start logging EM302/Start of line 0046

1424 SBP and EK60 Started

1425 Recording EK60 and SBP

1450 Conducting XBT#13

1457 XBT #13 Applied to line 0046

1452 Redo XBT #13 previous cast hit ship or faulty XBT

1430 Turn Knudsen power down to 1

1450 Turn Knudsen power back to 2

1523 Start line 0047

1536 Conduct XBT# 14, surface salinity changed by 3 ppt

1540 sonars secured dolphins spotted

1555 Restart mb in marine mammal protection mode

1600 SBP logging, EM302 logging to line 0048 XBT#14 applied to line 0047/turned down pulse to .5ms and gain to 20db on Knudsen

1601 EK60 logging

1603 Beyond 30m sound speed profiles are similar/surface variations

1604 Begin recording EK60 turn transmit power to 1 on Knudsen

1610 Bridge called. Heading west of seeps to avoid fishing vessel and gear near seep spot. Lining up for 2nd point

1721 Turn Knudsen gain up to 30db and pulse to 1

1734 Conducting XBT#15

1740 XBT# 15 applied to line 0049

1810 Sonars secured dolphins spotted off the bow/15 min standby

1825 Start up EM302 in marine mammal mode

1830 Logging to line 0051 on EM302

1831 EK 60 and SBP recording

1842 Change sonar direction 2 degrees

1845 Sonars secured – 40 foot whale spotted

1854 whale outside of 750 m safety zone (still in 15 minute zone)

1901 EM302 started

1902 EM302 logging

1906 Restart EK 60 and SBP - logging

2002 Dolphins – secured sonars

2003 Bridge called – trying to keep speed up to 9 knots but Gulf Stream is strong

2008 Another dolphin school spotted on bow

2020 dolphins still in sight

2030 last reported dolphin sighting

2045 XBT #16

2049 soft start up of EM302

2054 Applied XBT#16 to line 0053

2056 EK60 and SBP started

2100 Danielle and Derek on watch

2109 Dolphins sighted – secured sonars

2125 Dolphins sighted

2141 All 3 sonars turned back on (permission given by bridge)

2142 MB line 0054 started. EM 302 in soft start so coverage is poor. Had trouble finding bottom, so changed force depth to 200 and max depth to 800.

2150 Reduced SBP pulse length to 0.5 ms

2213 Observed potential seeps just off Cape Hatteras

2219 Began turn line 0055 – a little late

2224 Began line 0056. 10 degrees of crabbing

2242 Changed SBP Tx pulse to 2 ms and power to 2, as we are not getting much data back. Increased gain to 38 dB.

2247 Bridge sighted dolphins. Sonars secured. Hole observed in most recent MB coverage, increased max depth to 1500.

2303 Bridge called, start sonars.

2313 Ship is crabbing badly, swath coverage biased by this.

FEB 27th

0027 Begin turn line 0059

0031 Begin line 0060

0105 XBT cast #17 conducted

0114 XBT cast #17 applied to SIS

0123 Bridge informed us of stbd move in 8 mins due to vessel dead ahead.

0140 Bridge will keep this course for another 25’, but will be able to hit next waypoint.

0205 Another vessel behind aforementioned – will have to stay off track for a bit longer.

0219 The vessel turned, bridge said line is now attainable.

0306 SBP not viewable. Changed max depth to 3000 and range to 500.

0500 Kurt and Erin on watch.

0510 XBT #18 conducted

0517 XBT #18 applied to line 0064

0531 Start line 0065

0631 Start line 0066

0731 Start line 0067

0831 Start line 0068

0842 XBT # 19, applied to line 0068.

0931 Start line 0069

1031 Start line 0070

1140 XBT #21 (no XBT #20)

1150 Apply XBT #21 line 0071

1231 Begin line 0072

1300 Lindsay and Jackie on watch

1340 Attempted 2 XBT launches, both unsuccessful.

1359 Bridge called to report ship lost propulsion, possibly why XBTs failed.

1400 Standing by while ship gets back up to speed

1405 Third XBT attempt failed. Wind moving across fantail is likely causing wire to hit ship, will launch from port side.

1410 Bridge called to say there is fishing gear off the port side, survey asked for it to be removed

1425 Fishing gear is secured

1430 Successfully launched XBT # 22. Have asked bridge to not allow fishing gear off fantail in rough seas and wind, as the 3 previous XBTs failed because the wire came in contact with the fishing gear.

1438 XBT #22 Applied to line 74

1456 Change sonar direction –

1546 Change direction back to 2

1531 start of line 0075

1639 Bridge turned on Speed log

1705 secured speed log

1731 Start of line 0077

1820 XBT Cast #23

1823 XBT#23 applied to line 0077

2103 XBT# 24

2112 XBT #24 applied to line 0080

2100 Derek and Danielle on watch

2116 changed salinity in SIS 36.47

2121 changed SIS max angle from 70 deg to 75 deg for both port and starboard

2131 line 0081 started

2201 changed salinity in SIS to 36.49

2207 changed subbottom range from 200 to 100 over flat bottom for higher res data

2231line 0082 started

2247 Noticed SBP transmit off (ETs working on getting POSMV Heave feed to SBP) – turned back on, but GPS feed disconnected – Jackie working on restoring.

2331 line 83 started

0001 XBT cast #25

0011 applied SVP #25 to line 83

0147 XBT #26 completed

0157 XBT #26 applied to line 0085

0204 turned sub-bottom profiler back on & recording.

0505 XBT #27 completed

0517 XBT #27 applied to line 0088

FEB 28

0531 start line 0089

0631 start line 0090

0731 start line 0091

0831 start line 0092

0846 XBT cast #29 taken

0859 cast #29 applied line 0092

0931 begin line 0093 – numerous rocks/features evident in coverage

1031 begin line 0094

1131 begin line 0095

1132 XBT #30 taken, applied line 0095

1231 began line0096

1300 Lindsay and Jackie on watch

1350 XBT cast #31

1356 XBT#31 applied to line 97

1459 Changed along direction in SIS to 1 degree

1502 continuing fast transit (10-11 knots) to get to Key West on time for personnel pickup

1555 XBT #32

1602 XBT #32 applied to line 0099

1609 slowing down to test wind birds going off course some

1621 bridge called – back on track

1900 XBT #33

1907 XBT#33 applied to line 102

2046 SBP re-started / still trying to add posmv feed

2100 Derek and Danielle on watch

2258 XBT #34 collected

2305 XBT #34 applied to line 106

2353 SIS froze, attempting to reboot computer…

2356 SIS workstation beeping on reboot attempt- not rebooting hard drive SATA

0010 Will opened operator station for SIS, found loose cable. Reset cable and re-seated memory.

0016 SBP secured because of issues with SIS/EK60 secured momentarily to change output since EM302 isn’t working

0024 Rebooting SIS (workstation started)

0028 Started pinging EM302 again

0031 Started logging line 106 on EM302

0035 Knudsen and EK60 restarted and timed with trigger jigger

0048 Stopped pinging of EK60 for Will to troubleshoot

0056 Upon EM302 restart, SIS started a new file of line 106 but with new timestamp date of 03/01- the two lines are distinguishable by timestamp in their respective filenames

0131 Start line 107

0212 XBT #35

0219 XBT #35 applied to line 107

030 EK60 logging turned back on (logging off while POSMV TSS feed figured out. EK60 now has attitude data/heave)

0231 Start line 108

0331 Start line 109

0430 Bridge called to inform survey that they have to deviate off our preferred trackline to move shallower – less current, more speed.

0431 Start line 110

MAR 1

0500 Kurt & Erin on watch

0500 XBT #37 (no XBT 36)

0514 Bridge notifies survey that ‘speed log’ will be turned on briefly.

0515 XBT #37 applied line 0110

0526 Bridge call – ‘speed log’ off.

0531 start line 0111

0631 start line 0112

0731 start line 0113

0800 XBT #38, applied line 0013.

0831 start line 0114

0931 start line 0115

1031 start line 0116

1121 XBT #39, applied line 0116

1131 start line 0117.

1211 submerged cable observed in data – corresponds with charted cable on RNC 11013

1226 numerous submerged cables evident.

1300 Lindsay and Jackie on watch

1336 Knudson gain to 31dB

1435 XBT #40

1442 XBT #40 applied to line 0120

1538 start line 0121

1604 change time line files acquires data from 23600 to 7200

1609 screen shot of interesting warped looking backscatter, corresponds to ~10m elevation change in sub-bottom, possible rock or reef outcropping

1632 start line 0122

1720 Fine adjustments to Knudson gain, between 23 dB and 30 dB

1753 XBT # 41, applied to line 0122

2000 Line 132 possible shipwreck

2045 XBT #41, applied to line 0122

2104 Heading accuracy is 0.6 deg (red alarm on Posview)

2118 Heading accuracy is 0.93 deg

2213 Heading accuracy normal again (0.017 deg)

2206 Line 0125 started

2355 XBT #43 complete

0005 XBT 43 applied line 0125

0006 line 126 started

0038 Bridge called – fathometer turned on.

0054 Bridge called – secured fathometer.

0336 XBT #44 completed

0344 SVP #44 applied line 127

0406 start line 0128

MAR 2

0500 Kurt & Erin on watch

0606 start line 0129

0645 XBT #46, applied line 0129

0806 start line 0130

0927 XBT #47, applied line 0130

1006 start line 0131

1144 Bridge called – reports course change to west, won’t reach buoy until 930-1000.

1206 Begin line 0132

1240 XBT #48

1332 Begin line 0133 – turn towards key west

1300 Jackie & Lindsey on watch

1357 Sonars secured for thruster test and maneuvering.

1410 Running all BIST during transit into Key West – file EX1402L1.txt

1700 Kongsberg onboard. Transiting to first potential calibration site.

2030 EK60 calibration started. 400W-lower pulse(512); 8.0 surface – range 10 (Limits) (Layers); configure window – all param set.

2038 conducting XBT #49 for EK60 calibration.

2230 Changed pulse length to 1024 for on-axis only data; previously conducting data collection at 512, both 200W.

2254 1042 m/s pulse, 2000W power/swinging ball

2345 starting to recover ball. Center turns:

Port forward = 90 86 102

Port aft = 108 106 116

Starboard = 87 77 168

MAR 3

0256 stop EK60 for the night; too much biomass

0322 begin transit overnight survey area; starting survey at 2nd northern line

0339 XBT #50 conducted

0349 start line 0134

0355 SBP started

0400 start line 135 (2nd northern line of line plan)

0415 stopped EK60 to fix display appearance with Kongsberg (display view was not normal); restart reset the display correctly, gps feed gone.

0419 re-started EK60, GPS feedback.

0500 Kurt & Erin on watch

0546 Begin turn line 0136

0552 Begin line 0137 (planned line #3).

0652 XBT #51

0657 Begin line 0138 – processing to determine data quality.

0725 Appears to be a SV issue in the data. XBT data (.asvp) needs to be edited to actual depth – check data for SV quality at next processing.

0748 Begin turn line 139

0753 end turn, begin line 140

0807 .asvp not edited to depth for lines 0134 – 0137 – beginning of 0138. Sound velocity issues show in data – is it possible to post-process for these lines?

0945 begin turn line 141

0952 end turn, begin line 143 (line 142 is a fat-finger)

1000 XBT #52, applied line 143.

1141 Begin turn 0144 – initiating turn early for traffic

1146 Begin line 145 (planned line 6)

1151 XBT #53, applied to line 145

1254 End line 145

1259 begin line 146 – transit to calibration area

1300 Lindsay and Jackie on watch

1312 EK60 noticed not recording

1400 On Friday the EK60 for pitch, roll, heave plumbed in. All files since then are attitude corrected

1418 EM302 stopped logging and pinging

1419 SBP secured

1421 EM60 secured

1445 XBT # 54 was applied to EK60 calibration. 1518.33 m/s average sound velocity between5-25m used in EK60 calibration. Located under install – Environmental tab

1453 Calibration started

1600 4096 ms pulse length change

1634 Changed to 8192 pulse length

1742 Changed to 2048 ms pulse length

1800 EK60 calibration and data analysis complete. Heading to Key West to drop off Kongsberg personnel

1833 SBP on, EM302 logging to line 0147

1838 Conduct XBT # 55

1847 XBE #55 applied to line 0147

2030 SBP secured

2100 Boat transfer for Kongsberg reps; Danielle and Derek on watch.

2116 Started pinging EM302

2118 Started pinging & logging EK60, start logging EM302 at line 149. Knudsen off.

2124 XBT #56 conducted

2130 XBT 56 applied to line 149

2158 Noticed WCD file was missing for lines 147, 148, and wasn’t being written for newest line (149) despite WCL button in SIS being green. Restarted SIS & began pinging /logging of line 151 – WCD file now being written. Recap: No WCD for lines 147, 148, 149, 150.

2355 XBT #57 conducted

MAR 4

0001 XBT #57 applied to line 152

0118 SBP has been off for nav feed issues, then software froze. Reboot software – started SBP pinging/logging.

0324 XBT #58

0332 XBT #58, applied line 153

0500 Kurt & Erin on watch

0635 XBT #60 applied to line 155

0757 start line 156

0920 XBT #61, applied to line 156

0935 Knudsen loss of bottom

0940 Knudsen increased depth limit to 2000m

0940 EK60 depth range increased to 2000m

1121 Bridge call – strong currents, max ship speed 8.2 knots.

1146 XBT #62, applied line 157

1158 Fishing line out on port side – let bridge know if there is an issue for XBTs

1300 Lindsay and Jackie on watch

1315

1329 XBT cast #63

1330 EK60 software encountered error and shut down. Re-started software and began recording.

1335 XBT cast #63 applied to line 158

1336 Stopped pinging and recording EK60, files were recording to the wrong folder. Updated output settings and began pinging and recording

1343 Noticed under file output raw data tab was set to a 200 m range. Checked folder and it looks like files were still recording

1406 Gain and range manipulated SBP, smaller range (more detailed depth profile

1439 SBP secured to try and add heave

1544 SBP restarted

1602 XBT # 64

1609 XBT #64 applied to line 160

1793 Bridge called – ran into steering issues, this is why the line looks off. Bridge is troubleshooting issue

1740 XBT # 65

1743 XBT # 65 applied to line 160 (end of line)

2017 Start turn – break at line 162, collecting turn -line 163

2025 MOB drill – bridge is driving in circles outside of line plan area – still collecting data, MB line 163

2047 Running BIST #4 while ships recovers fast rescue boat from MOB drill. All green.

2055 Start logging 0164- turn

2100 Danielle and Derek on watch

2135 On next line, started line 165. SBP also restarted.

2148 XBT #66

2153 XBT #66 applied to line 165

2205 SBP was out of range, then lost bottom, adjusted settings until fixed.

2335 Line 166 start

MAR 5

0122 XBT #67 collected

0130 XBT 67 applied to line 166

0407 XBT #68 acquired

0414 XBT #68 applied to line 166

0500 Kurt & Erin on watch

0501 end line 168, begin turn line 169

0705 XBT #70, applied line 170

1005 XBT #171,applied line 172

1250 End line 173, begin turn line 174

1300 Jacklyn and Lindsay on watch

1310 Start line 175

1323 XBT cast #72

1325 Applied cast #72 to line 175

1600 XBT cast #73, applied to line 176

1600 Keep an eye on Knudsen SBP range

1704 SBP too much power temporarily, and lost bottom

1905 XBT cast #74

1910 Cast #74 applied to line 178

2100 Danielle and Derek on watch

2113 Turn started. End line 179, begin line 180

2135 Turn end, end line 180, start 181

2312 Conducted XBT #75, applied to line 181

MAR 6

0042 Bridge called- cargo ship will pass us ahead, need to slow down to ~8 knots for awhile, will maintain line

0135 Line 183 start

0204 XO advised again XBT conduction at this time. Lightning storm extending 8mi out, may take a few hours to clear

0240 Bringing next 2 survey lines to bridge

0301 XBT cast #76. Bridge call- clear of lightning storm

0307 XBT #76 applied to line 183

0358 Bridge called – deviating starboard off track a few minutes to test something for ETs, then will get back on track.

0458 end line 184, start turn line 185

0500 Kurt & Erin on watch.

0520 end line 185, start line 186

0532 XBT delayed due to lightning in vicinity of ship

0600 XBT #77, applied line 186

0719 start line 187

0859 XBT #79 (no XBT 78), applied line 187

1130 XBT #80, applied line 189

1219 end line 189, start dogleg – line 190 to east.

1300 Jacklyn and Lindsay on watch

1445 XBT cast #81, applied to line 0191

1500 Valley/small canyon feature at 24.24 deg N 83.65 deg W

1557 Stop line 0191, 0192 turn line

1628 Start line 0193

1634 Bridge called – speed dropped to 7.7 kts, will monitor for a few minutes, if they can’t bring speed back up they will start a third generator

1720 3rd generator online. Bringing speed to 9-9.5 knots

1805 Requested ship move starboard 350 m

1806 XBT # 82 conducted, applied to line 0913

1829 Start line 0194, decks secured for rough weather, heading into squall, high seas and winds

1918 Throttle decreased to cool engines, survey speeds 8-8.6 kts

2010 Start line 0195

2016 Start line 0196

2029 Start of line 0197

2039 Bridge called – slowing speeds (after turn) from 10.7 to 9-9.5 kts

2100 Danielle and Derek on watch

2252 XBT#83 collected

2257 XBT #83 applied to line 198

2344 Line 199 started (turn line)

March 7

0003 Turn line ended, line 200 started

0134 XBT #84 collected

0139 XBT #84 applied to line 200

0308 stop line 201, began turn line 202

(note: Will is troubleshooting Caris processing station – RT side of MB PROC1 went black. While this is being worked on we switched to MBPROC2 to continue processing MB data in Caris)

0340 end turn line 202, begin line 203

0500 Kurt & Erin on watch

0510 XBT #86, applied line 203

0703 Begin turn, line 205

0727 End turn line, begin line 206

0748 XBT #87, applied line 206

1022 XBT #88, applied line 207

1113 begin turn line 208

1132 end line 208, begin line 209

1300 Jacklyn and Lindsay on watch

1332 end line 208, begin line 209

1337 requested bridge come stbd 300 m for coverage

1339 conduct XBT #89

1345 XBT # 89 applied to line 0210

1507 line 12 begin

1517 line 213 begin

1532 line 214 begin – turn line

1602 line 215 begin

1701 XBT cast #90

1707 XBT # 90 applied to line 0215

1718 Noticed SBP was locked up, re-started

1720 SB restarted, line started recording at 1721

1805 SBP secured, not getting GPS

1943 Start line 217 – turn

1946 Start line 218 – transit

2035 XBT cast #91, applied to line 0218

2100 Danielle and Derek on watch

2114 End line 218, start turn line 219

2134 End line 219, start survey line 220

2138 Heavy seas, data poor, asked bridge to slow to 6.5 knots

2145 No bottom tracking. Stop EM302 logging until better direction found.

2150 Trying 310 degrees with respect to swell

2156 Started logging MB on heading 310, 6.5 kts. Max coverage setting port and stbd at 1000m (backscatter not good, bathy ok), tilt 0 degrees

2204 Data has been looking much better for past 5 minutes- asked bridge to maintain heading and speed (309 degrees at 7.5 kts)

2211 Data poor again

2212 Asked bridge to try heading 315…good at first, then large gap.

2223 Asked bridge for heading 325 (checking if possible due to traffic)

2229 Bridge turning to 325

2240 Ping mode forced into deep. Min/max depth gates tightened, around actual WD

2311 End line 222, start 22 (use 222 to build line plan in Hypack based on 325 heading)

2318 XBT #92 collected

2324 XBT #92 applied to line 223

MAR 8

0116 End line 224, start turn line 225

0130 End turn line 225, start survey line 226 (almost same line as 224 but in opposite direction)

0211 Have been increasing max coverage to 1800m port and stbd

0254 XBT #93 collected

0300 XBT #93 applied to line 226

0349 Increased max coverage to 2000 port/stbd

0435 Ended 224, start turn line 225

0504 bridge called – we decided to skip a line to the west, bridge will get there when they can – avoiding a ship.

0500 Kurt & Erin on watch

0520 Inadvertent SIS computer shut-down.

0526 SIS computer on-line, acquiring line 228.

0556 XBT #94, applied line 28

0738 Data coverage is good throughout most of the line except at the north end. Holiday to fill. Continuing to skip a line.

0754 end line 229, begin turn line 230

0813 end turn line, begin line 231

0850 XBT #96, applied line 231

1101 Begin turn line 233

1114 End turn line, begin line 234.

1134 XBT #97, applied line 234.

1300 Lindsay and Jackie on watch

1344 Line 235 delay turn for a bit due to traffic

1413 Line 236 turn

1429 Start line 237 turn

1439 lie 238

1444 XBT# 98 applied to line 0238

1447 Ship back up to survey speed

1457 Shift to port 200m

1500 Shift another 200m to port

1548 requested 400m shift starboard

1634 XBT#99

1639 XBT#99 applied to line 0239

1740 Start line 0240 turn

1807 Start survey line 0241

19520 Changed max coverage’s from 2000m to 5000m

1939 XBT # 100 Applied to line 0241

2055 Line 243
2100 Danielle and Derek on watch (mid-turn)

2222 Have asked bridge to shift line west 500 m, then additional 400m as swath coverage grows in deeper water

2348 Began turn line #245

MARCH 9
0015 end turn 245, start 246

0024 XBT #101 collected

0030 applied SVP #101 to line 246

0045 interference in data – loss of bottom track.

0100 interference on port swath (line 246, large blowouts port side)

0109 same interference again – whole center of swath (1/3 of swath interrupted)

0234 EK 60 GPS feed doesn’t appear to be updating correctly (Will checking), temporarily stopped logging

0249 stop line 247, start 248

0250 EK 60 logging again, SBP power turned down to 1 (430 m depth)

0321 end turn 248, start line 249

0328 XBT#102 collected

0334 SVP #102 applied to line 249

0350 asked bridge to move line 249 750 m eastward to get better overlap with previous line, several minutes later asked to come back west 350, then 300 more west back to original plotted line

0430 increased SBP pulse length to 2 ms and power to 2 (1250 m water depth)

0440 sped up to 9-9.5 knots

0500 Kurt & Erin on watch y’all

0600 Begin turn line 251

0622 Begin line 252

0640 XBT# 103, applied line 252

0810 end line 252, begin turn line 253

0817 begin line 254 (cross line)

0930 XBT #105 (no xbt #104), applied line 254

1140 XBT #106, applied to line 255

1201 Begin line 256

1235 Bridge called – must deviate from line to overtaking traffic/vessel

1300 Lindsay and Jacklyn on watch

1313 start line 258

1333 start line 259

1440 XBT # 10

1445 XBT #107 applied to line 259

1512 Request 200 m shift to port

1534 start line 260

1542 Operation halted for diver operation, once operations resume shift 200 m to starboard

1546 Ship’s engines shutdown for dive, end line 260, sonars secured

1925 Dive ops secured. Re-energize sonars

2000 XBT # 108

2002 EK60 logging, not logging SBP because ET’s testing heave input into Knudson software

2003 Start logging Multibeam, XBT # 108 applied to line 0261

2025 Bridge called, shifting starboard and decreasing speed for vessel traffic

2047 maintain 6-7 knots for 30 minutes while vessel overtakes ship, then resume survey speed and line plan

2100 Danielle and Derek on watch

2130 bridge called. Can now get back on survey line 261 and up to survey speed

2301 XBT#109 collected

2307 XBT#109 applied to line 262

2353 start turn line 263

2357 end turn line 263, start line 264

March 10

0128 end line 264, start turn line 265

0142 end turn 265, start survey line 266

0148 called bridge, requested line shift 500 m south

0156 XBT#110 collected

0206 SVP #10 applied to line 266

0211 bridge called, lots of traffic, slowing to 8 knots and may have to delay next turn

0217 bridge called, must maintain course 40 minutes – should work fine for MB data overlap

0322 stop line 266, start turn line 267

0344 stop line 267, start 268

0355 XBT #111 collected

0400 XBT #111 applied to line 268

0448 changed SBP pulse length to 2, changed TVG from “None” to 20logR as recommended in SOP, then switched back to “None”

0500 Erin and Kurt on watch

0530 begin turn line 269

0550 end turn line, begin line 270

0600 XBT #113 – SV sensor red in deep area of line

0708 Reverted to XBT 111 in shallow when SVP sensor turned yellow

0721 XBT 114 taking another XBT for shallow water

0725 Applied XBT 114 to line 271. Processed data looks good. An artifact is seen in sis surface , but not in processed surface

0754 Begin turn line 272

0808 End turn line, begin line 273

0916 Applied cast #113 to line 273

0957 XBT#115 applied to 273

1031 start turn line 275

1047 end turn start line 276

1230 XBT#116 to line 276

1303 start line 278 turn

1319 start 279

1554 start line 281

1559 start line 282

1616 XBT#117

1620 XBT# 117 applied to line 282

1706 start line 0283 turn

1713 start line 0284

1720 Request 600m shift to stbd, bearing 020

1720 KEA file is recording all Ascii fields

1932 XBT#118

1935 XBT#118 Applied to line 118

2016 Start line 268

2100 Danielle and Derek on watch

2105 End line 286, start turn 287 (transit to small holiday)

2236 Covered holiday, end line 287, begin transit line 288 towards next holiday area

2325 XBT #119 collected

2329 ~375m of water, decreased SBP pulse length to 0.5 ms

2333 Stop line 288, start 289

2335 Applied SVP #119 to line 289

2345 End line 289 start 290

2348 Noticed noise in SBP and turned gain down

MAR 11

0007 Stop line 290, start line 291 (turn)

0010 Increased SBP range to 500

0013 End turn line 291, start line 292

0036 SBP: reduced pulse length to 0.5 ms and gain to 35 dB

0145 XBT #120 collected

0150 XBT #120 applied to line 292

0200 Delivered slightly modified line plan to bridge (Flescarp14.lnw)

0213 SBP pulse to 2 ms and power to 2

0249 End line 293, start 294

0329 SBP down to 1 ms, power 1

0335 SBP up to 2 ms, power 2

0344 XBT #121 collected

0351 XBT #121 applied to line 294

0500 Kurt & Erin on watch

0615 XBT #122 applied to line 0295

0622 end line 295, begin line 296 (turn line)

0701 end turn line 296, begin line 297

0712 two (2) lines still not converting after 2 hours – copied .all files to local drive for conversion. Processing quickly C:\CARIS\Preprocess🡪 . The converted files are still going to the normal network project directory.

0733 adjust power/pulse length on Knudsen to 1/1

0915 XBT#124, applied to line 300

1108 slow down for traffic

1118 Knudsen power/pulse increased to 2/2

1150 end turn line 300, begin line 301

1155 XBT #125 applied to line 301.

1300 Jackie and Lindsay on watch

1522 start line 0305

1614 XBT #126

1618 XBT #126 applied to line 0306, advance to survey line 0306

1726 Ship speed up to 10 knots for engineering test

1818 back to survey speed

1900 XBT 127, applied to line 0307

1919 start line 0308, after small turn/change in bearing.

1924 currents are keeping ship with max speed of 8.5 knots

2054 turned SBP down, power 1, pulse = 1ms, xbt 128 conducted.

2102 SVP #128 applied to 308

2119 Start line 309

2311 XBT # 129 collected

2319 SVP # 129 applied to line 309, line 310 start

2348 Created new field sheet and base surface – UTM zone 16N

MAR 12

0145 XBT #130 collected

0153 XBT #130 applied to line 311

0154 Request 100m shift to stbd

0242 Stop line 311, start 312

0316 SBP up to 2/2

0352 XBT #31 collected

0358 SVP # 131 applied to line 312

0433 SBP temporarily lost bottom – deepened max depth limit

0444 Decreased SBP gain to 40 dB

0500 Kurt and Erin on watch

0645 XBT # 133, applied to line 314

0917 XBT # 134, applied to line 315

1140 XBT # 135, applied to line 316

1300 Jacklyn and Lindsay on watch

1441 XBT # 136, applied to line 0317 (half way through line)

1700 Speeds maxing at 7 kts, running against strong current

1721 Bridge called – slowing to 5 kts for vessel traffic

1840 XBT # 137, applied to line 0320

1845 Bridge called – ship maneuvering off line for traffic

2042 line 321 started

2100 Derek and Danielle on watch

2107 xbt 138 collected

2111 svp 138 applied to line 321

2203 xbt 139 – svp warning in sis turned red

2209 svp 139 applied to 321, 2242 line 322 start

2330 data quality degrading, possibly due to needle gunning – ask deck to cease.

2344 needle gunning ceased below decks in lower propulsion room.

2356 needle gunning ceased based on evaluation of survey, ops, co, and engineering. Data quality returned to normal. About 9.5 km affected data total.(end of line 321, start of line 322).

0042 start line 323

0153 XBT 140 applied to line 323

0242 start line 324

0335 swath kept getting smaller, then lost bottom. Changed max angles to 65/65

Narrowed max/min depth settings – found bottom again, data improved. Along direction tilt changed to zero. Sea state picking up.

0410 swells disrupting mb data, angles reduced 60/60

0416 xbt 141 collected

0421 xbt 141 applied t online 324

0429 reduced coverage to 2800/2800 – improved data substantially

0448 reduced max coverage to 2500/2500

0500 Kurt & Erin on watch

0615 poor data quality due to wx

0710 XBT 142, applied line 0326

0751 ship changing course for traffic, all sonar’s have very poor quality data, tried adjustments to setting, but no improvement, rough seas/wx

0930 holding off on xbt for better wx/seas and data

1015 course change – improved data quality, still heavy seas, continue postponing xbt.

1053 running 8 mi. north of trackline – parallel – avoiding traffic.

1300 Lindsay and Jacklyn on watch

1312 Change along track direction to -5

1355 XBT #143 applied to line 0329

1409 Moved to avoid traffic

1746 Conducting XBT# 144

1749 XBT 144 applied to line 0331

2057 XBT #145 collected

2100 Danielle and Derek on watch

2102 XBT#145 applied to line 333

2105 EK60 stopped to add Rsync, then re-started

2242 line 334 start

2332 reduced SBP pulse to 1 ms and power to 1

MARCH 14

0028 XBT#146 collected

0034 XBT#146 applied to line 334

0042 start line 335

0239 XBT#147 collected

0242 star line 336

0247 SVP # 147 applied to line 336

0252 tilt changed from -5 to -4

0341 moving along track direction back to zero

0439 XBT #148 acquired

0500 Kurt & Erin on watch

0506 XBT #148 applied line 337

0800 XBT #149 applied line 338

1045 XBT #150 applied line 341

1200 Begin line 344

1300 Lindsay and Jacklyn on watch

1316 XBT # 152, applied to line 344

1320 Start line 345, turn

1326 Start line 346

1723 XBT #152, applied to end of line 347

1726 Start line 348

1727 Start line 349 for turn

1739 Start line 0350

1915 Went over a perfect circular hole at nadir – SBPand EK60 both lost bottom track briefly

2025 XBT # 153, applied at end of line 0351

2030 Start line 0352, turn

2039 start line 0359

2043 requested 400m shift to port side.

2100 danielle and Derek on watch

2118 bridge call – time left to finish this line, then 1 more.

2123 requested bridge to move south 200m (holiday)

2202 stop line 353, start turn line 354

2213 end turn line 354, start survey line 355

2222 asked bridge to shift line south 250m

2342 stop line 355, start 356

2347 reduce gain on SBP, reduced min depth on EK60 to 15m

2354 XBT 154 acquired

March 15th

0000 XBT 154 applied line 356

0201 end 357, start turn 358

0204 end turn 358, start transit line 359

0210 XBT 155 acquired

0218 SVP 155 applied line 359

0311 SBP secured (147m)

0347 SIS SVP warning yellow

0351 XBT #156 acquired

0357 SVP #156 applied to line 359

0455 bridge called – turning on fathometer

0500 Erin and Kurt on watch

0543 end logging EM302, EK60 (less than 50m depth), run BIST, power down, sonars secure.