

BOLIVAR 2004 Seismic Experiment – RV Maurice Ewing Cruise EW0404
Version 1.0

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|--------------------------|--------------------------|-----------------|
| BOL-1 | 50 | 2 | 2501 | 1 | 2499 | 0130/112 | 1935/112 | 12° 43.115 71° 02.656 | 12° 46.650 69° 59.720 | 1,2 |
| BOL-2 | 50 | 62 | 660 | 2600 | 3198 | 2017/112 | 0037/113 | 12° 45.615 69° 57.073 | 12° 34.367 69° 45.166 | 2,3 |
| BOL-3 | 50 | 2246 | 4694 | 3500 | 5949 | 0117/113 | 1442/113 | 12° 36.440 69° 43.804 | 13° 42.377 69° 51.635 | 3,4 |
| BOL-6 | 50 | 6074 | 8795 | 6074? | 8792 | 0840/119 | 2350/119 | 11° 46.387 68° 54.270 | 12° 37.427 69° 48.445 | 5,6 |
| BOL-4 | 150 | 1389 | 2174 | 9000 | 9786 | 0136/120 | 1632/120 | 12° 39.657 69° 44.151 | 11° 37.427 69° 48.445 | 6,7 |
| BOL-3A | 50 | 131 | 2367 | 10000 | 12236 | 1744/120 | 0555/121 | 11° 39.494 69° 39.844 | 12° 39.960 69° 44.149 | 7,8 |
| BOL-4A | 150 | 792 | 1552 | 13000 | 13761 | 0556/121 | 1849/121 | 12° 39.960 69° 44.149 | 13° 41.447 69° 51.519 | 8,9 |
| BOL-3B | 50 | 4664 | 6709 | 14000 | 16846 | 1849/121 | 0624/122 | 13° 41.447 69° 51.519 | 14° 36.763 69° 58.418 | 9,10 |
| BOL-4B | 150 | 9 | 625 | 17200 | 17817 | 0853/122 | 1933/122 | 14° 31.082 69° 57.515 | 13° 41.285 69° 51.508 | 10 |
| BOL-60 | 50 | 1 | 4120 | 18000 | 22120 | 2123/122 | 0055/124 | 13° 43.556 69° 53.839 | 12° 24.796 68° 32.938 | 10,11, 12,13 |
| BOL-61 | 50 | 4 | 1738 | 23000 | 24735 | 0250/124 | 1333/124 | 12° 24.624 68° 34.819 | 13° 08.302 68° 16.919 | 13,14, 15 |
| BOL-7 | 50 | 173 | 3852 | 25000 | 28679 | 1420/124 | 1132/125 | 13° 07.452 68° 14.399 | 11° 34.867 68° 52.260 | 15,16, 17 |
| BOL-62 | 50 | 1 | 1138 | 28900 | 30038 | 1309/125 | 2123/125 | 11° 37.740 68° 54.569 | 11° 24.987 68° 26.115 | 17,18 |
| BOL-63 | 50 | 29 32 | 2120 | 31024 | 33115 | 2304/125 | 1148/126 | 11° 23.831 68° 29.102 | 12° 10.504 67° 56.721 | 18,19 |
| BOL-8 | 50 | 2 | 678 | 34000 | 34676 | 1318/126 | 1705/126 | 12° 10.836 68° 00.408 | 12° 00.863 67° 44.367 | 19 |

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEGY Tapes |
|---------|--------------|------------|-----------|------------|-----------|------------|----------|--------------------------|--------------------------|--------------|
| BOL-9 | 50 | 3 | 1081 | 35000 | 35974 | 1857/126 | 0103/127 | 12° 04.894 67° 45.626 | 11° 35.710 67° 51.209 | 19,20 |
| BOL-11 | 50 | 1518 | 2354 | 36000 | 36853 | 1617/127 | 2109/127 | 11° 12.780 67° 33.544 | 11° 33.389 67° 26.323 | 20 |
| BOL-12A | 50 | 5704 | 7787 | 37000 | 39064 | 2158/127 | 0946/128 | 11° 33.439 67° 28.282 | 10° 39.152 67° 23.062 | 20,21, 22 |
| BOL-13 | 150 | 18 | 1569 | 40000 | 41552 | 1113/128 | 1341/129 | 10° 37.245 67° 23.365 | 12° 43.590 67° 43.648 | 22,23 |
| BOL-13A | 150 | 1572 | 2594 | 42000 | 43023 | 1608/129 | 0950/130 | 12° 43.292 67° 34.592 | 14° 06.243 67° 42.100 | 23 |
| BOL-12B | 50 | 38 | 6052 | 44005 | 50020 | 1136/130 | 2153/131 | 14° 08.156 67° 42.217 | 11° 25.662 67° 27.616 | 23-28 |
| BOL-15 | 50 | 42 | 1655 | 51000 | 52614 | 2304/131 | 1019/132 | 11° 28.417 67° 28.417 | 12 07.862 67 14.350 | 28,29 |
| BOL-16 | 50 | 24 | 3827 | 53000 | 56803 | 1058/132 | 0928/133 | 12 07.218 67 14.180 | 11 49.266 65 34.875 | 29,30, 31 |
| BOL-47 | 50 | 60 | 3379 | 5700 | 60320 | 1114/133 | 0620/134 | 11 47.137 65 36.851 | 13 17.703 65 25.142 | 31,32, 33 |
| BOL-19 | 50 | 96 | 6742 | 60500 | 67108 | 0744/134 | 2201/135 | 13 14.707 65 27.223 | 10 20.601 64 39.563 | 33-38 |
| BOL-20 | 150 | 35 | 898 | 68000 | 68863 | 2323/134 | 1410/136 | 10 21.019 64 39.822 | 11 31.532 64 59.090 | 38 |
| BOL-26 | 50 | 70 | 4022 | 6900 | 72952 | 0541/139 | 0304/140 | 11 36.814 64 19.449 | 13 23.922 64 17.999 | 39-41 |
| BOL-27 | 150 | 230 | 2069 | ? | 73000 | 0451/140 | 2042/141 | 13 21.665 64 18.152 | 10 44.502 63 40.322 | 41-43 |
| BOL-28 | 50 | 56 | 86 | 15000 | 15029 | 2122/141 | 2132/141 | 10 44.995 63 37.699 | 10 45.880 63 37.736 | 43 |
| BOL-28A | 50 | 123 | 281 | 15100 | 15304 | 2145/141 | 2237/141 | 10 46.795 63 37.729 | | 43 |

BOLIVAR 2004 Seismic Experiment – RV Maurice Ewing Cruise EW0404
5/26/2004 8:47 AM

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEGY Tapes |
|---------|--------------|------------|-----------|------------|-----------|------------|-----------|------------------------|------------------------|------------|
| BOL-28B | 50 | 169 | 15632 | 15300 | 20962 | 0112/142 | 0636/143 | 10 48.011 63 37.899 | 13 09.912 64 15.467 | 44-47 |
| BOL-30 | 50 | 20 | 12894 | 21000 | 33879 | 0813/143 | 1719/146 | 13 10.157 64 20.099 | 10 02.470 59 21.407 | 47-56 |
| BOL-31 | 50 | 215 | 1964 | 34000 | 35749 | 1916/146 | 0508/147 | 10 03.923 59 22.877 | 9 55.046 60 06.762 | 56-57 |
| BOL-32 | 50 | 252 | 3135 | 830 | 38883 | 0754/147 | 2232/147 | 09 56.025 60 07.357 | 10 58.797 60 54.455 | 57-59 |
| BOL-33 | 50 | 85 | 1025 | 39000 | 39940 | 0034/148 | 0626/148 | 10 55.976 60 53.273 | 11 11.537 60 32.180 | 59 |
| BOL-34 | 50 | 127 | 620 | 40000 | ~40493 | 0734/148 | ~1039/148 | 11 08.892 60 34.876 | 11 02.386 60 24.081 | 59-60 |
| BOL-34A | 50 | 535 | 2714 | 41000 | 43179 | 1417/148 | 0615/149 | 11 03.117 60 25.299 | 10 31.951 59 34.405 | 60-61 |
| BOL-35 | 50 | 494 | 863 | 43500 | 44274 | 0621/149 | 1148/149 | 10 31.639 59 34.405 | 10 14.986 59 44.915 | 61-62 |
| BOL-36 | 175 | 49 | 3298 | 43000 | 46230 | 1253/149 | 2021/151 | 10 16.131 59 42.933 | 13 01.460 64 07.212 | 62-65 |
| BOL-37 | 50 | 23 | 4208 | 47000 | 51202 | 2122/151 | 0430/153 | 13 00.126 64 57.150 | 11 27.733 63 01.777 | 65-67 |

11.46 decdes
63.03 decdes

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|-------|--------------|------------|-----------|------------|-----------|------------|----------|-----------------------|--------------------------|
| BOL-1 | 50 | 2 | 2501 | 1 | 2499 | 0130/112 | 1935/112 | 12 43.115 71 2.656 | 12° 46.650 69° 59.720 |

Comments: SEG-Y tapes 1, 2

Duplicate shot 881; 2nd is bogus
4 ~~X~~ shots missing after 1405

bad channels : 48 373-378 low amplitude

This line involved 2 large turns to avoid Aruba. Severe trace edits of up to 1/2 streamer during these turns - use IEDIT parameters from database

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|-------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|--------------------------|
| BOL-2 | 50 | 62 | 660 | 2600 | 3198 | 2017/112 | 0037/113 | 12° 45.615 69° 57.073 | 12° 34.367 69° 45.166 |

Comments:

SEGY tapes 2,3

Several False starts to this line before shot 62

Bad channels : 48 373-378 low amp

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|-------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|--------------------------|
| BOL-3 | 50 | 2246 | 4694 | 3500 | 5949 | 0117/113 | 1442/113 | 12° 36.440 69° 43.804 | 13° 42.377 69° 51.635 |

Comments:

SEGY Tapes 3,4

Bad Channels: 48 373-378 low amp

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|-------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|--------------------------|
| BOL-6 | 50 | 6074 | 8795 | 6074? | 8792 | 0840/119 | 2350/119 | 11° 46.387 68° 54.270 | 12° 37.427 69° 48.445 |

Comments:

SEG-Y Tapes 5,6

11 shots missing after 8152

Duplicate shot 8612; second occurrence is after 8615.

Bad Channels : 48,236 373-378 low amp

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|-------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|--------------------------|
| BOL-4 | 150 | 1389 | 2174 | 9000 | 9786 | 0136/120 | 1632/120 | 12° 39.657 69° 44.151 | 11° 37.427 69° 48.445 |

Comments:

SEG Y Tape 6,7

Bad Channels: 48,236 373-378 low amp

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|--------------------------|--------------------------|
| BOL-3A | 50 | 131 | 2367 | 10000 | 12236 | 1744/120 | 0555/121 | 11° 39.494 69° 39.844 | 12° 39.960 69° 44.149 |

Comments:

SEG Y Tapes 7, 8 *

2 shots missing after 287

* SEG Y tape 7 has data gap between shots 792 and 1038.
These shots were saved to a separate tape.

This line was originally started as BOL3 (duplicate name) before being renamed to BOL3A at shot 290. Some logfiles, etc. may be named *.BOL3 for the start of this line.

* SEG Y tape 8 is missing shots 1386-1431

Shot 1432 has a garbage header and reads shot 16665
Shot 1728 " " " " " "

Bad Channels: 48, 236 373-378 low amp

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|------------------------|
| BOL-4A | 150 | 792 | 1552 | 13000 | 13761 | 0556/121 | 1849/121 | 12° 39.960 69° 44.149 | 13 41.447 69 51.519 |

Comments:

SEGY Tapes 8,9

Bad Channels : 48, 236 373-378 low amp

shot # 6709 recorded wrong on tape (6789)

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|------------------------|-------------------------|
| BOL-3B | 50 | 4664 | 6709 | 14000 | 16046 | 1849/121 | 624/122 | 13 41.447 69 51.519 | 14 36 736 069 58 197 |

Comments:

SEGY Tapes 9

Many noisy channels ~ shots 6200-6300. Lots of IEDIT edits.

Shot # 6709 recorded wrong on tape (6789)

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|--------------------------|
| BOL-4B | 150 | 9 | 625 | 17200 | 17817 | 0853/122 | 1933/122 | 14° 31.082 69° 57.515 | 13° 41.285 69° 51.508 |

Comments:

Missed shots 2-4, EOT 146 w/ 1 shot on it
shot 9, first shot

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|--------------------------|
| BOL-60 | 50 | 1 | 4120 | 18000 | 22120 | 2123/122 | 0055/124 | 13° 43.556 69° 53.839 | 12° 24.796 68° 32.938 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|--------------------------|
| BOL-61 | 50 | 4 | 1738 | 23000 | 24735 | 0250/124 | 1333/124 | 12° 24.624 68° 34.819 | 13° 08.302 68° 16.919 |

Comments:

Sporadic missing shots between shots 347 and 639.

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|-------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|------------------------|----------------|
| BOL-7 | 50 | 173 | 3852 | 25000 | 28679 | 1420/124 | 1132/125 | 13° 07.452 68° 14.399 | 11 34.867 68 52.260 | 15,16, 17 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-62 | 50 | 1 | 1138 | 28900 | 30038 | 1309/125 | 2123/125 | 11 37.740 68 54.569 | 11 24.987 68 26.115 | 17,18 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|------------------------|------------------------|-------------|
| BOL-63 | 50 | 29 | 2120 | 31024 | 33115 | 2304/125 | 1148/126 | 11 23.831 68 29.102 | 12 10.504 67 56.721 | 18, 19 |

Comments:

RAID crash, shots 857-1371 originally not written to tape. Recovered from 3490 tapes.

1 shot missed around shot 664

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|-------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-8 | 50 | 2 | 678 | 34000 | 34676 | 1318/126 | 1705/126 | 12 10.836 68 00.408 | 12 00.863 67 44.367 | 19 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|-------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-9 | 50 | 3 | 1081 | 35000 | 35974 | 1857/126 | 0103/127 | 12 04.894 67 45.626 | 11 35.710 67 51.209 | 19,20 |

Comments:

Shot 1081 - Streamer ~~for~~ failure

Restarted w/Bol 11 @ 1627 w/ 14 guns

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-11 | 50 | 1518 | 2354 | 36000 | 36853 | 1617/127 | 2109/127 | 11 12.780 67 33.544 | 11 33.389 67 26.323 | 20 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|---------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-12A | 50 | 5704 | 7787 | 37000 | 39064 | 2158/127 | 0946/128 | 11 33.439 67 28.282 | 10 39.152 67 23.062 | 20,21, 22 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-13 | 150 | 18 | 1569 | 40000 | 41552 | 1113/128 | 1341/129 | 10 37.245 67 23.365 | 12 43.590 67 43.648 | 22,23 |

Comments:

~ Shots 980 - 1085 \Rightarrow Guns powered down due to
sea turtle encounter.

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|---------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-13A | 150 | 1572 | 2695 | 42000 | 43023 | 1608/129 | 0950/130 | 12 43.292 67 34.592 | 14 06.243 67 42.100 | 23 |

Comments:

Turtle shut down - shot 979

Ramp-up - shot 1085

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|---------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|--------------------------|---------------------------|
| BOL-12B | 50 | 38 | 6052 | 44005 | 50020 | 1136/130 | 2153/131 | 14° 08.156 67° 42.217 | 11° 25.662 67° 27.616 | 23,24, 25,26, 27.28 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEGY Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|--------------------------|------------------------|---------------|
| BOL-15 | 50 | 42 | 1655 | 51000 | 52614 | 2304/131 | 1019/132 | 11° 28.417 67° 28.417 | 12 07.862 67 14.350 | 28,29 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|------------------------|------------------------|--------------|
| BOL-16 | 50 | 24 | 3827 | 53000 | 56803 | 1058/132 | 0928/133 | 12 07.218 67 14.180 | 11 49.266 65 34.875 | 29,30, 31 |

Comments:

Recording system problem (GCS90) and multiple reboots. Edit out shots 1139, 1140, 1155-1167, 1170-1177, 1180-1189, 1192, 1194-1228, 1236.

Sperm whale, shooting 1 gun shots 1293-~1385, then ramping up
Turtle, shooting 1 gun shots 1457-~~1457~~~1497, then ~~1497~~ ramping up.

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-47 | 50 | 60 | 3379 | 5700 | 60320 | 1114/133 | 0620/134 | 11 47.137 65 36.851 | 13 17.703 65 25.142 | 31,32, 33 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|------------------------|------------------------|-------------|
| BOL-19 | 50 | 96 | 6742 | 60500 | 67108 | 0744/134 | 2201/135 | 13 14.707 65 27.223 | 10 20.601 64 39.563 | 33-38 |

Comments:

134/1301 - Seismit Crash - ~ 1009 to shot 1063

1433 - Seismit Crash ~ 1341 to shot 1505

1834 - Syntex Buffer error - Lost 5 shots (~ 1930 - 1935)

1912 } Buffer Errors - ~ 2100 (2 shots)
1924 } ~ 2105 (3 shots)
~ 2110 (2 shots)

- 3 min Break for land shots - 3635

1st shot after pause - 3645

2nd land shot 3720 - Resumed shots - 3731

- MMO shut down to 5 guns - 4991 - ramp up begins - 5053
Completed by 5122

- Pause for land shot 5745 - back shooting 5754

- MMO ramp down - 6072 - 6100 - Completed 6179

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-20 | 150 | 35 | 898 | 68000 | 68863 | 2323/134 | 1410/136 | 10 21.019 64 39.822 | 11 31.532 64 59.090 | 38 |

Comments:

Shut down for dead whale - ~ 898

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-26 | 50 | 70 | 4022 | 6900 | 72952 | 0541/139 | 0304/140 | 11 36.814 64 19.449 | 13 23.922 64 17.999 | 39-41 |

Comments:
 140/0451 Seisnet problems ~ 130 - 230
 1212-1236 Ramp down - M10 - shot 258 - 310
 Rampdown - M10 - 349 ~ 391
 Pause for farside shot 1105 - 1109
 2nd farside shot 1132 - 1136

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEGY Tapes |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|------------------------|------------------------|------------|
| BOL-27 | 150 | 230 | 2069 | ? | 73000 | 0451/140 | 2042/141 | 13 21.665 64 18.152 | 10 44.502 63 40.322 | 41-43 |

Comments:

Missed shots 1484 - 1491 - ? why

MMO Rampdown - 1585 - (ramp up) - 1782 = Completed

Pause for Mine blast - 1815 - 1818

System failure - shot 1877 - spectra back on shot 1899

*Pause for land shots - 1999 - 2004
- 2nd land shots - 2009 - 2013*

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-28 | 50 | 56 | 86 | 15000 | 15029 | 2122/141 | 2132/141 | 10 44.995 63 37.699 | 10 45.880 63 37.736 | 43 |

Comments:

*Seisnet failure - shot 86 - 123 (restored)
QC - lost shots 128 - 133*

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|---------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|-----------------|----------------|
| BOL-28A | 50 | 123 | 281 | 15100 | 15304 | 2145/141 | 2237/141 | 10 46.795 63 37.729 | | 43 |

Comments:

142/0322 Compression failure - ~ 552 - 556 (4 shots)

Double shots - missed shot 1202

shots 1203 - 06 double shots

1207- MM0 - ~ 2154 - ~ 2362
1306

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
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| BOL-28B | 50 | 169 | 15632 | 15300 | 20962 | 0112/142 | 0636/143 | 10 48.011 63 37.899 | 13 09.912 64 15.467 | 44-47 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|------------------------|------------------------|-------------|
| BOL-30 | 50 | 20 | 12894 | 21000 | 33879 | 0813/143 | 1719/146 | 13 10.157 64 20.099 | 10 02.470 59 21.407 | 47-56 |

Comments:

*Incorrect shot #'s. Reel 724 - correct # 3972 - 4075
files 24952 - 25055*

MMO - ~ 4867 - ~5037

145/0121 Tape drive failure - missed ~ 28 shots - first recovered shot 7115 → Pg 61 of Recording log

0643 - lost 1 shot

0927 - lost 8173

1052 - lost 8372

146/0012 - missed shot 10244

0611 - lost 1 shot

1131 - lost shot 12082

1635 - lost 1 shot

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|-----------------------|----------------|
| BOL-31 | 50 | 215 | 1964 | 34000 | 35749 | 1916/146 | 0508/147 | 10 03.923 59 22.877 | 9 55.046 60 06.762 | 56-57 |

Comments:

*Compressor failure — shots 1525 ~ 1527
— 1528 - 16 guns*

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-32 | 50 | 252 | 3135 | 830 | 38883 | 0754/147 | 2232/147 | 09 56.025 60 07.357 | 10 58.797 60 54.455 | 57-59 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEGY Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|---------------|
| BOL-33 | 50 | 85 | 1025 | 39000 | 39940 | 0034/148 | 0626/148 | 10 55.976 60 53.273 | 11 11.537 60 32.180 | 59 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEGY Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|-----------|------------------------|------------------------|---------------|
| BOL-34 | 50 | 127 | 620 | 40000 | ~40493 | 0734/148 | ~1039/148 | 11 08.892 60 34.876 | 11 02.386 60 24.081 | 59-60 |

Comments:

148/0851 - Spectra failure - Headers - Shots 348-372

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|---------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-34A | 50 | 535 | 2714 | 41000 | 43179 | 1417/148 | 0615/149 | 11 03.117 60 25.299 | 10 31.951 59 34.405 | 60-61 |

Comments:

148/ 1946 — shot 1343/file 41808 Boel

149/ 0414 — shot 2479/file 42944 — Boel

0531 — 2629/ 43095 — Boel

0652 — mixed 194

0655 — shots 201 — 501 — ABl file

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEGY Tapes |
|--------|--------------|------------|-----------|------------|-----------|------------|----------|------------------------|------------------------|------------|
| BOL-35 | 50 | 494 | 863 | 43500 | 44274 | 0621/149 | 1148/149 | 10 31.639 59 34.405 | 10 14.986 59 44.915 | 61-62 |

Comments:

Shot - 285 - Bad

- 395 - Bad

Last shots 620 - 622

shot 1004 - Bad

149/0632 - 1 bad shot

- Missed shots 1110 - 1111

missed shots 1339 - 1341

Drive failure lost shots 1695 - 1717

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEGY Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|---------------|
| BOL-36 | 175 | 49 | 3298 | 43000 | 46230 | 1253/149 | 2021/151 | 10 16.131 59 42.933 | 13 01.460 64 07.212 | 62-65 |

Comments:

| Line | Shot Spacing | First Shot | Last Shot | First File | Last File | Start Time | End Time | Start Location | End Location | SEG Y Tapes |
|--------|-----------------|---------------|--------------|---------------|--------------|------------|----------|------------------------|------------------------|----------------|
| BOL-37 | 50 | 23 | 4208 | 47000 | 51202 | 2122/151 | 0430/153 | 13 00.126 64 57.150 | 11 27.733 63 01.777 | 65-67 |

BOLIVAR 2004 Seismic Experiment – RV Maurice Ewing Cruise EW0404
6/1/2004 12:06 PM

*

cb1.d Streamer Compass Bird Block Data

This data is not processed, and is linked only by the shot points!

| Shot Time | Line | Shot | Latitude | Longitude |
|-----------------------|---------|--------|--------------|---------------|
| 2000+079:00:08:40.085 | strike1 | 000296 | N 15 49.6217 | W 060 19.8019 |

| 2nd GPS Position | | Tailbuoy Position | |
|------------------|---------------|-------------------|---------------|
| Latitude | Longitude | Latitude | Longitude |
| N 15 49.6189 | W 060 19.8101 | N 15 47.1234 | W 060 20.1901 |

| Furuno | Streamer | Gyro | Compasses & Heading |
|--------|-----------------|------|---------------------|
| 344.1 | C01 2.3 C02 1.7 | | ... |

fu.r Raw Furuno Log

| CPU Time Stamp | Track | Speed | Hdg | Gyro |
|-----------------------|-------|-------|-------|-------|
| 2000+166:00:01:53.091 | - | 4.4 | 140.5 | 148.3 |

hb.n Hydrosweep Centerbeam

| CPU Time Stamp | Latitude | Longitude | Centerbeam Depth |
|-----------------------|-------------|--------------|------------------|
| 2000+074:09:55:00.000 | N 13 6.6206 | W 59 39.3908 | 134.9 |

Merged Data

| CPU Time Stamp | Latitude | Longitude | GPS Used | Set | Drift | Dept |
|-----------------------|--------------|--------------|----------|-----|-------|------|
| 2000+200:12:25:00.000 | N 45 54.1583 | W 42 47.1770 | gp1 | 0.0 | 0.0 | 4662 |

| Magnetic | | Gravity | | EOTVOS | Drift | Shift |
|-----------------|---------|---------|----------|--------|-------|-------|
| Total Intensity | Anomaly | FAA | GRV | | | |
| 49464.7 | 55.5 | 22.2 | 980735.0 | -8.4 | -0.1 | 2.8 |

| Temperature | Salinity | Conductivity |
|-------------|----------|--------------|
| 0.0 | 0.0 | 0.0 |

The gravity drift and shift are values that have been added to the

raw gravity logged to make up for drift in the meter that has been lost in accordance with a gravity check at each port stop.

temperature, salinity and conductivity data with only logging a Thermosalinograph, which is not the usual case.

mg.n Magnetics Data

- *1 A minus sign in the time stamp is flagged as a spike point, probably noise...
- *2 Anomaly is based on the International Geomagnetic Reference Field revision 1985

| CPU Time Stamp | Latitude | Longitude | Raw Value | Anomaly |
|----------------------|--------------|--------------|-----------|---------|
| 200+077:00:23:00.000 | N 16 11.2918 | W 59 47.8258 | 36752.2 | -166.8 |

n Navigation File

| CPU Time Stamp | Latitude | Longitude | Used | Set | Drift |
|-----------------------|-------------|--------------|------|-----|-------|
| 2000+074:00:03:00.000 | N 13 6.2214 | W 59 37.9399 | gp1 | 0.0 | 0.0 |

rt.s Real-time Navigation <With Tailbuoy>

| GPS0: | Epoch Time | Latitude | Longitude | DeltaE (metrs) | DeltaN (Metrs) |
|-------|---------------|-----------|------------|----------------|----------------|
| | 996581427.203 | 38.201585 | 022.487240 | -0.1898 | -2.2570 |

| Furuno | Centr Sea | Wind |
|------------|------------|-----------|
| Sped Hdg | Depth Temp | Speed Dir |
| 04.4 179.5 | 837.9 26.1 | 5.0 310 |

| GPS1: | Epoch Time | Latitude | Longitude | DeltaE (metrs) | DeltaN (Metrs) |
|-------|---------------|-----------|------------|----------------|----------------|
| | 996581427.000 | 38.201395 | 022.487352 | -0.2603 | -2.6270 |

| Tail: | Epoch Time | Latitude | Longitude | DeltaE (metrs) | DeltaN (Metrs) | Name of GPS 0 |
|-------|---------------|-----------|------------|----------------|----------------|---------------|
| | 996581419.000 | 38.232197 | 022.489356 | -0.4290 | -2.3976 | gps1 |

rt.s Real-time Navigation <Without Tailbuoy>

| GPS0: | Epoch Time | Latitude | Longitude | DeltaE (metrs) | DeltaN (Metrs) |
|-------|---------------|-----------|------------|----------------|----------------|
| | 996581427.203 | 38.201585 | 022.487240 | -0.1898 | -2.2570 |

| Watr Fur | Centr Sea | Wind |
|----------|-----------|------|
|----------|-----------|------|

Sped Hdg Depth Temp Speed Dir

04.4 178 5.8 27.8 26.1 5.6 310

Calc Calc time Name of
Speed Dist Diff GPS

02.2650 22.5312 10.137 gps1

** Calculated values between the last N points, where N is the filter length spe
** in the RT/NAV logging program.

** Calculated Speed = sqrt (DeltaE**2 + DeltaN**2)

ts.n Shot Data

** A minus sign in the time stamp is flagged as a missing shot
that has been interpolated. The shot was not present in the
file, but the shot has been calculated using a very simple
interpolation.

| CPU Time Stamp | Shot # | Latitude | Longitude | Line Name |
|-----------------------|--------|--------------|---------------|-----------|
| 2000+079:00:08:01.507 | 000295 | N 15 49.5703 | W 060 19.7843 | strike1 |

ts.n.status Shot Data Status

occasionally the MCS system will miss a shot. In these cases
it is nice to know what is going on. The ts.n.status files
will report the lines that were shot for the day, the time the
line started and if any shots are missing from that line:

LINE strike1: 98+079:00:00:15.568 : 000283 .. 002286
 MISSING: 347, 410, 1727

LINE dip2: 98+079:23:05:22.899 : 000002 .. 000151

Says that on Julian Day 079 of 1998, two lines (strike1 and dip2)
were run. The end of strike 1 (shots 000283 to 002286) and the
start of dip2 (shots 000002 to 000151).

vc.r Raw Gravity Counts

sample BGM-3 gravity count record (without time tag):

pp:dddddd ss

| | |
|-------|--|
| _____ | status: 00 = No DNV error; 01 = Platform DNV |
| _____ | 02 = Sensor DNV; 03 = Both DNV's |
| _____ | count typically 025000 or 250000 |
| _____ | counting interval, 01 or 10 |

The input of data can be at 1 or 10 seconds.

vc.n Gravity Data -- see README.gravity

** A minus sign in the time stamp is flagged as a spike point,
probably noise, or change in course

*2 m_grv calculates the Eotvos correction as:

eotvos_corr = 7.5038 * vel_east * cos(lat) + .004154 * vel*vel
 *3 The theoretical gravity value is based upon different models for
 the earth's shape

1967 = 1967 Geodetic Reference System Formula

1980 = 1980 Gravity Formula

*4 The FAA is computed as:

faa = corrected_grv - theoretical_grv

* Velocity smoothing is performed w/ a 5 point window

| CPU Time Stamp | Latitude | Longitude | Model | FAA | RAW |
|-----------------------|--------------|---------------|-------|------|-----------|
| 2000+148:00:10:00.000 | N 09 34.7255 | W 085 38.5826 | 1980 | 9.48 | 978264.16 |

| Eotvos | Drift | DC | Raw Velocity | Smooth Velocity |
|--------|-------|-------|---------------|-----------------|
| Smooth | Total | Shift | North East | North East |
| -74.78 | 0.06 | 4.16 | 1.875 -10.373 | 1.927 -10.166 |

wx. Meteorological Data

| CPU Time Stamp | True Spd Dir |
|-----------------------|--------------|
| 2001+045:00:00:00.967 | 7.8 22 |

| Bird1: Speed | | | | Direction | | |
|--------------|------|------|------|-----------|------|------|
| Inst | 60sA | 60mA | 60sM | Inst | 60sA | 60mA |
| 7.8 | 6.6 | 8.5 | 16.8 | 277 | 291 | 5 |

| Bird 2 Speed | | | | Direction | | |
|--------------|------|------|------|-----------|------|------|
| Inst | 60sA | 60mA | 60sM | Inst | 60sA | 60mA |
| 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 |

| Temperature | | | |
|-------------|------|------|------|
| Inst | 60mA | 60mm | 60mM |
| 15.0 | 14.2 | 14.3 | 15.1 |

| Humidity | | | Barometer |
|----------|------|------|-----------|
| Inst | 60mm | 60mM | |
| 92 | 90 | 93 | 1027.5 |

Inst: Current
 60sA: 60 second average
 60mA: 60 minute average
 60sM: 60 second maximum
 60mm: 60 minute minimum
 60mM: 60 minute maximum

CPU Time Stamp

2001+045:00:00:00.967

TSG Data String??

A906E23C28549E711BD8

local temp

28.300

external temp

28.286

local conduc

5.850

local salinity, 1000mb nominal press.

36.372

mmet.n Merged Meteorological data
TSG, WX, CT merged with Nav at 1 minute fixes

Sample Record:

date time lat lon gpu head spd
2001+244:00:00:00.000 12.14071 44.98469 gp1 10.2 83.0

tws twd temp hum press cti cte con sal ct
26.5 228.0 30.6 87.0 1000.8 28.8 28.8 5.9 36.3 28.8

gpu = gps unit in use
head = ship's heading
spd = ship's speed in knots
tws = true wind speed
twd = true wind direction
temp = air temp (celcius)
hum = relative humidity (%)
press= pressure in mb
cti = sea temp from the internal TSG sensor
cte = sea temp from the external TSG sensor
con = conductivity, Siemens/meter
sal = salinity, practical salinity units
ct = sea temp from the C-Keel sensor (to tenths of a degree)