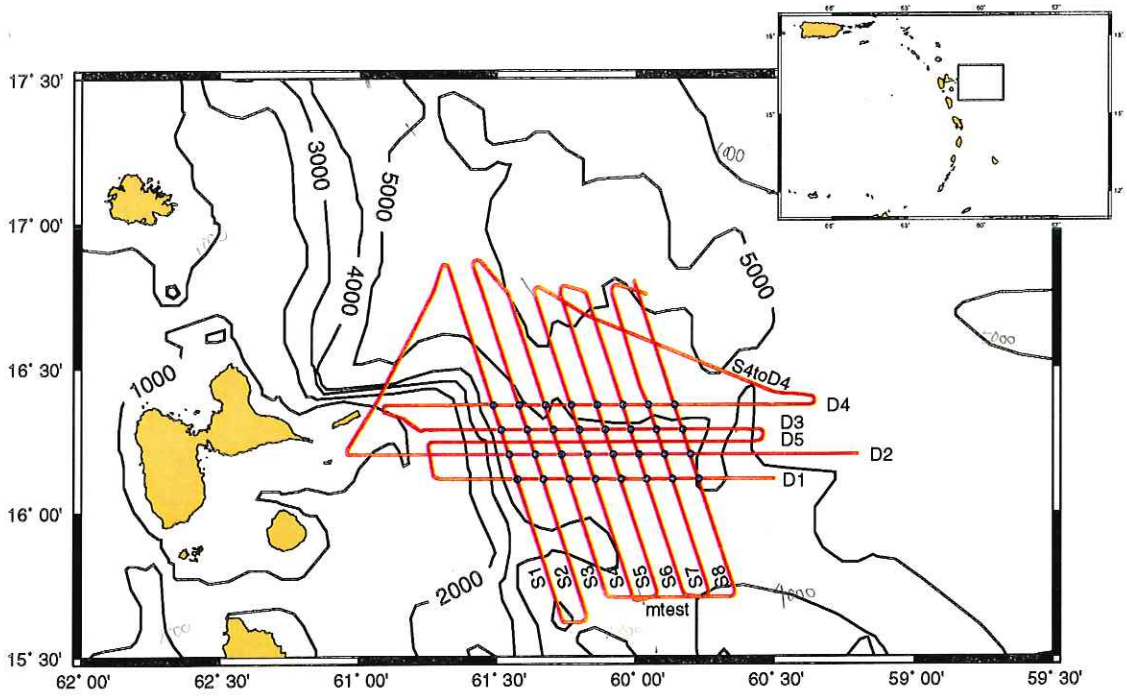
Structure, Tectonics, and Sediment Flow Through the Lesser Antilles Subduction Zone

Cruise Report

R/V Maurice Ewing - EW9803

Bridgetown, Barbados - Norfolk, Virginia

March 15, 1998 - April 6, 1998



Summary

The data acquisition was very successful. We deployed 32 OBSs and all were recovered. We acquired 1,850 km of multichannel seismic reflection data, 230 km more than originally planned. Preliminary examination of the data show numerous reflection arrivals from the subducting and overriding plates, and from forearc basin and within the accretionary wedge. These data along with the refraction data provide an excellent basis for achieving the goals of the project.

The acquisition was conducted in two nearly equal halves separated by recovery and redeployment of 12 of the OBS instruments. In the first half of the experiment we deployed all 20 OBSs at the west and east ends of a 4 x 8 grid of lines each 10 km apart (Figure 1). Following deployment of the streamer and airguns, we shot 4 of the 8 strike lines and 1 of the 5 dip lines before recovering the streamer and moving 12 of the OBS instruments. The first half of our acquisition finished about 6 hrs ahead of schedule, and we spent this time working on the streamer to improve streamer buoyancy and balance. Lead weights left on the streamer from the previous cruise made the streamer difficult to control. The primary problems were heavy sections near the front and middle sections. The first 12 OBSs released on time, and were all recovered. All 12 recorded data, but one had severe instrument noise making it unusable. The 12 OBSs were redeployed to complete the first half of the data acquisition.

In the second half of the experiment, OBSs were redeployed in the center of the 4 x 8 grid to fill in the missing gap in the middle (Figure 1). The streamer work preceding the redeployment succeeded in making it better balanced and easier to control. Except for a few noisy traces and some other noise problems, the streamer worked well both into the sea and with it. The last four of the eight strike lines were acquired in calm seas, and from initial examination the data look reasonably good. After the strike lines, our initial plans were to shoot the three remaining (out of four) dip lines. At the end of the shooting the strike lines, however, we were ahead of schedule and planned an extra dip line (Dip25). The weather remained calm for the rest of the dip line shooting, and we were able to finish all of the planned dip lines as well as the extra one. The 20 OBSs deployed for the second half of the experiment were all recovered, and all recorded data. For the cruise as a whole we were very successful. We acquired 1850 km of seismic reflection data, more than we planned, and deployed 32 OBSs. Of the 32 OBSs, all were recovered and only one appears to have had instrument problems that make it unusable.

Participants

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R/V Ewing Officers

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Jeff Sylvia	Third Mate
Albert Karlyn	Chief Engineer

Narrative

The cruise began on March 15, 1998 from Bridgetown, Barbados and ended on April 6, 1998 in Norfolk, VA. The following is a narrative of the ship operations during the cruise. The lines are numbered as shown in the location map. The OBS stations are referenced by a two digit number that indicates the dip line number (1-4) in the first digit and strike line number (1-8) with the second digit. (i.e. Station 18 is at the crossing of Dip1 and Strike 8). The data were acquired in two phases. In the first phase we deployed 20 OBSs and shot seismic lines Strike 8,3,2,1 and Dip2. The streamer and airguns were recovered and 12 of the OBSs were redeployed before beginning the second phase. During the second phase we shot lines Strike 7,6,5,4 and Dip 4,3,2.5,1.

March 15	The Ewing left port at 6:00 AM and steamed north 350 km to the survey area.
March 16	Ewing arrives at the first OBS drop location (Station 18) at 00:30 local time, and OBS deployment begins. All 20 OBSs are deployed ending at 14:41. Streamer deployment begins at 17:45.
March 17	Streamer deployment ends at 11:30 local time and airguns and magnetometer are deployed immediately after. Guns begin firing at 12:30. The start-of-line at the north waypoint for the first seismic line, S8, is crossed at 13:30.
March 22	Line Dip2 is completed ahead of schedule ending the first phase of acquisition. The extra time before OBS recovery was spent on streamer work to improve its balance. Lead was removed from the middle sections of the streamer and near the front. The streamer was towed to test balance, and retrieved by 13:00. Transit to OBS 12 and recovered at 22:04.
March 23	OBS retrieval continued until 18:43. Nine of the 12 OBSs to be recovered were retrieved. Redeployment began again at 12:03. After 4 deployments, three more OBSs were recovered.

March 24 The redeployment of the remaining nine OBSs was finished by 7:19. The streamer was redeployed after removing more lead near the front and adding oil. The airguns and magnetometer were redeployed and shooting began at 17:52 on line Strike 7.

March 31 Line Dip 1 was finished at 18:00. OBS retrieval began

April 1 Final OBS retrieval ends at 5:08. All 20 OBSs are recovered. Head for port immediately after last OBS recovery.

April 6 Arrive in Norfolk, VA at 20:00.

Seismic Reflection Data Summary

Line	Shot Spacing	Streamer Depth	Gun Depth	Channels	SOL	EOL
Line Order						
Strike 1	100	10	8-12	164	78-20:53	79-13:01
Strike 2	100	10	8-12	164	78-03:04	78-20:48
Strike 3	100	10	8-12	164	77-12:05	78-03:00
Strike 4	125	10	8-12	168	85-21:22	86-12:45
Strike 5	125	10	8-12	168	85-05:36	85-21:17
Strike 6	125	10	8-12	168	84-14:51	85-05:34
Strike 7	125	10	8-12	168	83-21:52	84-14:10
Strike 8	100	10	8-12	164	76-16:11	77-08:20
Dip1	50	10	8-12	168	89-05:33	89-22:00
Dip2	50	10	8-12	164	79-23:05	80-21:58
Dip25	50	10	8-12	168	88-14:56	89-05:14
Dip3	50	10	8-12	168	87-21:35	88-14:56
Dip4	50	10	8-12	168	87-02:12	87-21:32
Acquisition Order						
Strike 8	100	10	8-12	164	76-16:11	77-08:20
Strike 3	100	10	8-12	164	77-12:05	78-03:00
Strike 2	100	10	8-12	164	78-03:04	78-20:48
Strike 1	100	10	8-12	164	78-20:53	79-13:01
Dip2	50	10	8-12	164	79-23:05	80-21:58
Strike 7	125	10	8-12	168	83-21:52	84-14:10
Strike 6	125	10	8-12	168	84-14:51	85-05:34
Strike 5	125	10	8-12	168	85-05:36	85-21:17
Strike 4	125	10	8-12	168	85-21:22	86-12:45
Dip4	50	10	8-12	168	87-02:12	87-21:32
Dip3	50	10	8-12	168	87-21:35	88-14:56
Dip25	50	10	8-12	168	88-14:56	89-05:14
Dip1	50	10	8-12	168	89-05:33	89-22:00

OBS Data Summary

OBS Station Labeling

OBS stations are labeled using a two digit number. The first digit refers to the dip line on which the OBS is located. The second digit refers to the intersecting strike line. (e.g. 16 is at the intersection of Dip1 and Strike6.)

Deployment, Recovery and Data Summary

The attached table shows details of deployment, recovery and acquired data at each station

Station Performance

Station 11:	no problem
Station 12:	no problem other than dead acoustic recall battery
Station 13:	no problem
Station 14:	CPU battery failed after completing full recording (1)
Station 15:	no problem
Station 16:	no problem
Station 17:	no problem
Station 18:	no problem
Station 21:	no problem
Station 22:	no problem
Station 23:	no problem
Station 24:	no problem
Station 25:	no problem
Station 26:	no problem
Station 27:	no problem
Station 28:	no problem
Station 31:	large noise on all three channels; analog circuitry appears unstable (2)
Station 32:	no problem except a very minor one (3)
Station 33:	channel 3 (H_2) dead (2)
Station 34:	no problem
Station 35:	no problem
Station 36:	no problem
Station 37:	no problem other than dead acoustic recall battery
Station 38:	no problem except that the backup timer was slow to update (2)
Station 41:	no problem
Station 42:	no problem
Station 43:	no problem
Station 44:	no problem
Station 45:	no problem
Station 46:	channel 3 (H_2) signals weak — instrument tilted? (4)
Station 47:	no problem
Station 48:	disk drive failed after competing 92% of scheduled recording (5)

(1) One of the 11-cell string of alkaline D cells to power the main CPU failed prematurely after completing a combined full 275-hour recording at stations 11 and 14 but before the release of the instrument from the sea floor for the second recovery, forcing the instrument to be released by the backup release. The instrument surfaced about 45 minutes after the expected time.

(2) The instruments at stations 31, 33 and 38 are ORSTOM instruments deployed during the first phase. A more thorough checkout before the deployment should have prevented these problems. The problems were noticed and corrected before the second deployments at stations 36, 17 and 34, respectively.

(3) A rare single bit error occurred at the most significant bit of the 5th byte of the first main recording.

(4) No abnormal behavior was observed during the first deployment of this instrument (chassis 94-7/sphere 57112) at station 23. Thus it is suspected that the cause of the weak channel 3 (H_2 component) was due to an excessive tilt of the instrument on the sea floor.

(5) The disk drive started to fail after successfully writing 837 Mbytes of data, or 92% of the scheduled recording, missing the final 14 hours of recording. This disk drive, IBM S/N 7L4G2383, also gave disk read errors while retrieving the data at disk block addresses 382,052, 382,116 and 1,553,672.

OBS Data Files

Raw and partially processed data files brought back to Austin are the following:

Data Files	Media	Tape/Disk Label
Primary Data Files		
Raw OBS data, tar files		
Stations 11, 12, 13, 18 & 21	DAT tape	1, 2
Stations 22, 23, 28, 31 & 32	DAT tape	3, 4
Stations 33 & 38	DAT tape	5, 6
Stations 16, 17, 37 & 47	DAT tape	11, 12
Stations 26 & 27	DAT tape	13, 14
Stations 35, 36, 45 & 46	DAT tape	15, 16
Stations 14, 15 & 25	DAT tape	19, 20
Stations 24, 34 & 44	DAT tape	21, 22
Stations 42 & 43	DAT tape	25, 26
Stations 41 & 48	DAT tape	27, 28
Raw OBS data,, dd files, main recording only		
Stations 11, 12, 13, 18, 21, 22, 23, 28, 31, 32, 33	DAT tape	dd#1
Stations 38, 14, 15, 16, 17, 24a, 24b, 25a, 25b, 26a	DAT tape	dd#2
Stations 26b, 27a, 27b, 34, 35, 36, 37, 41a, 41b, 42a	DAT tape	dd#3
Stations 42b, 43a, 43b, 44, 45, 46, 47, 48a	DAT tape	dd#4
Station 48b	DAT tape	dd#5
a and b refer to the first and the second phase,, respectively, of shooting Byte shift has been removed from the data except for all but station 32 on dd#1 tape and the first 5 files of tape dd#2.		
OBS/Mac dialog capture files (include all start-up, diagnostic, pre-deployment and post-recovery information)	Floppy	Barbados #1
also on	DAT tape	dd#5, file 2
Shot tables (recording schedules)	Floppy	Barbados#1
also on	DAT tape	dd#5, file 2
Shot times		
from Ewing (ts.n** files)	DAT tape	dd#5, file 2

as recorded with UTIG GPS	Floppy	Barbados #1
Navigation data from Ewing (hb.n** files)	DAT tape	dd#5, file 2

Secondary Data Files

Raw SEG-Y data, tar files		
Stations 11, 12, 13, 18 & 21	DAT tape	7
Stations 22, 23, 38, 31 & 32	DAT tape	8
Stations 33 & 38	DAT tape	9
Stations 16, 17, 37 & 47	DAT tape	17
Stations 26 & 27	DAT tape	18
Stations 35, 36, 45 & 46	DAT tape	23
Stations 14, 15 & 25	DAT tape	24
Stations 24, 34 & 44	DAT tape	29
Stations 42 & 43	DAT tape	30
Stations 41 & 48	DAT tape	31
Stations 16, 32, 34 & 38 w/ H1 sign reversed	DAT tape	32
Final SEG-Y data, tar files (preliminary)		
Stations 11,12,13,18,21,22,23,28,31,32,33 & 38	DAT tape	10
Stations 14,15,16,17,26,27,34,37 & 47	DAT tape	33
Stations 24,25,35,36,41,44,45 & 46	DAT tape	34
Stations 42,43 & 48	DAT tape	35

Other Related Files

Schedules, etc.	Floppy	Barbados #2
OBS header lists	DAT tape	dd#5, file 2
Bathymetric correction tables (levitus) from Ewing	DAT tape	dd#5, file 2
Programs written during cruise	DAT tape	dd#5, file 2
OBSTOOL output and log files	DAT tape	TBA

Equipment and Instrumentation

Seismic Source

A single airgun array was used throughout the duration of the data acquisition. Twenty airguns comprised the array, for a total array size of 8420 cu. in. (137.65 L). The guns and their configuration are described below and in Figure 2. Few difficulties with the airguns were experienced during the cruise, and there was no loss of data due to the airguns. Occasional downtime for individual guns is noted in the log.

Source characteristics were modeled to show the expected source signature. These results are displayed in Figure 3. Particularly noteworthy is a peak-to-bubble ratio of 4:1. Alternative towing arrangements did not significantly affect the size of the bubble.

GUN #	X (m)	Y (m)	Z (m)	VOLUME (cu.in)	PRESSURE (psi)
1	35.05	14.48	8.0-12.0	145	2000
2	39.63	12.95	8.0-12.0	850	2000
3	44.20	11.43	8.0-12.0	235	2000
4	35.05	9.91	8.0-12.0	305	2000

5	39.63	8.40	8.0-12.0	520	2000
6	44.20	6.86	8.0-12.0	385	2000
7	35.05	5.33	8.0-12.0	250	2000
8	39.63	3.81	8.0-12.0	850	2000
9	44.20	2.29	8.0-12.0	540	2000
10	35.05	0.76	8.0-12.0	145	2000
11	35.05	-0.76	8.0-12.0	145	2000
12	39.63	-2.29	8.0-12.0	500	2000
13	44.20	-3.81	8.0-12.0	850	2000
14	35.05	-5.33	8.0-12.0	250	2000
15	39.63	-6.86	8.0-12.0	350	2000
16	44.20	-8.38	8.0-12.0	520	2000
17	35.05	-9.91	8.0-12.0	350	2000
18	39.63	-11.43	8.0-12.0	260	2000
19	44.20	-12.95	8.0-12.0	825	2000
20	35.05	-14.48	8.0-12.0	145	2000

Navigation and Timing

Throughout the entire cruise the seismic lines were navigated using a y-code GPS navigation system. The y-code receivers were installed during a previous cruise (9801) and had not been well tested prior to our leg. The y-code positions acquired during the two days in port were compared with C/A code and differential GPS data acquired during cruise EW9207, also at the dock. The results 76,229 positions from the y-code receiver showed that 95% of the positions lie within ±8 m (Figure 4). This compares to ±4 m for differential GPS data and ±80 m for the C/A code. On the basis of these results, we concluded that the y-code was sufficiently accurate to use for navigating the seismic lines and determining our position downline for firing airguns on distance.

Primary navigation came from a Trimble Y-code gps receiver throughout the cruise. A Trimble and a Magnavox CA code receiver were also recorded, and periodically compared to the Y-code solution. Y-code positions were used to estimate the velocity of the ship, which was used to determine the shot interval. After a shot was fired, the current velocity estimate, based on the the current position and the position 12 seconds previous, was used to determine the time of the next shot. This time was not updated for a possible ship speed change. Each shot was taken relative to the previous shot; there was no total "down line distance" calculation. We checked for accumulation of error against the raw gps, and there seemed to be none.

During the night, we received DGPS corrections from many radio-beacon sources in the area, and compared these corrected fixes to the Y-code. Most of these DGPS sources were hundreds of kilometers away (because of the low frequency radio ionospheric skip at night) and yet they gave surprisingly precise fixes compared to the Y-code reference. There were no DGPS stations which could be received reliably during the day in the work area.

OBS Technical Details

Pertinent recording parameters of the OBS/Hs used in the experiment are as follows:

Active sensor channels: 1 through 3 or 4 as indicated in the attached table
- Channel 1 vertical geophone, 4.5 Hz
- Channel 2 horizontal geophone 1, 4.5 Hz
- Channel 3 horizontal geophone 2, 4.5 Hz

Channel 4 hydrophone, Ocean & Atmospheric Science E-2PD, 3.0 Hz high-pass in preamplifier

The geophones are Mark Products L-15B, except spheres S/N 58732, 59105, 59126, 59368 and 59371, deployed at station 17, 18, 22, 25, 33, 35, 41 and 45, which have Oyo GS-11D geophones.

Signal polarity:

Channel 1:	positive amplitude deflection for downward velocity
Channels 2 & 3:	form right-hand system with channels 1 except as noted
Channel 4:	positive amplitude deflection for positive pressure variation

Nominal sensitivity (unit digitizing level):

Channels 1-3:	w/ Mark Products geophones:	2.5 nm/s
	w/ Oyo geophones:	1.5 nm/s
Channel 4:		1.0 mPa

Anti-alias filters:	30 Hz Butterworth high-pass, 24 dB/oct roll off, all channels
Sampling interval:	8.0013 ms
Recording mode:	continuous with short inter-record gaps

Parameters related to the sound source and navigation are as follows:

Mean air-gun depth:	8.5 m
Total air-gun volume:	8,503 cu in. (139.3)
Source setback from navigation reference:	55.6 m
Bathymetry reference:	50.6 m forward of navigation reference

OBS Clock Correction

Key clock calibration data, providing those at (1) a half to an hour before deployment, (2) immediately before deployment and (3) immediately after recovery or each instrument are given below. On each line, the second and the third characters specify station code; characters 4 through 16 give the OBS clock time (local time; = UTC-4 hours) in year, month, day, hour, minute, second (two digits each) and tenth of second (one digit); and the right half gives the corresponding GPS clock time (UTC) in day, hour, minute and second.

For calibrations before March 17 (day 075 or earlier), 0.01773 s, corresponding to the trigger pulse length of the switch box, has been subtracted from the original calibration data to correct for the incorrectly set trigger pulse polarity of the GPS clock.

T119803161024000 075:14:24:00.009934900
T119803161102000 075:15:02:00.009990000
T119803222336000 082:03:35:59.748749600

T129803160924000 075:13:24:00.043165400
T129803161011000 075:14:11:00.043879800
T129803222212000 082:02:12:00.211945500

T139803160832000 075:12:32:00.003129600
T139803160912000 075:13:12:00.003307500
T139803230830000 082:12:29:59.924038500

T149803231134000 082:15:34:00.000751600
T149803231155000 082:15:55:00.000821900
post-recovery calibration not available

T159803231201000 082:16:01:00.000593200
T159803231254000 082:16:54:00.000821600
T159803312014000 091:00:13:59.926033000

T169803231304000 082:17:04:00.006915900
T169803231343000 082:17:43:00.007452600
T169803311137000 090:15:37:00.025098800

T179803231350000 082:17:50:00.001646100
T179803231426000 082:18:26:00.001839800
T179803311015000 090:14:14:59.745502900

T189803152351000 075:03:51:00.009484500
T189803160012000 075:04:12:00.009507800
T189803231602000 082:20:01:59.840708400

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T219803230057000 082:04:57:00.092646600

T229803161200000 075:16:00:00.016765000
T229803161225000 075:16:25:00.016910000
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T239803160736000 075:11:36:00.015569100
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T269803311249000 090:16:48:59.932900100

T279803160338000 075:07:37:59.998767900
T279803160421000 075:08:20:59.998771700
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T289803160038000 075:04:38:00.023928300
T289803160105000 075:05:05:00.024352100
T289803231735000 082:21:35:00.069519900

T319803161403000 075:18:02:59.999717700
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T359803240231000 083:06:31:00.002780600
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T369803240143000 083:05:43:00.002356000
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T389803231849000 082:22:48:59.818930900

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T429804010354000 091:07:54:00.030773400

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T489803160225000 075:06:25:00.027658100
T489803160308000 075:07:08:00.028097900
T489803310522000 090:09:22:00.310078800

Seismic streamer and recording system

The seismic recording system used on EW9803 was the DMS-2000 system. This was the last cruise to use this system on the *Ewing*. The streamer was configured with a 25 m leader section followed by the first active section. No leader section of the proper length, and no stretch sections were available. This configuration likely lead to some of the noise problems described below. Active sections were 25 m with hydrophones every 1.25 m. This was followed by a tow rope and a large tail buoy.

Two configurations were used during the cruise (Figure 2). The first half of the cruise deployed a 164-channel streamer, with a total of 4100 m of active section. During the second half, we towed a 168-channel streamer with a total of 4200 m of active section. Throughout the cruise the ship speed was maintained between 4.6 - 5.0 kts. Speeds were generally closer to 5.0 kts during the first half of shooting to try to retain control of the streamer. During the second half of the cruise, speeds were usually between 4.6 - 4.8 kts. Some currents of up to around 2 kts. affected the ships speed. Currents were particularly in shallow water near the islands.

The data were filtered with an analog anti-alias filter with an upper cut-off of 160 Hz, and then recorded on 3480 cartridge tapes in SEGD format with a 2 ms sampling interval. Record length varied depending on shot interval between 16 and 18 s.

On board processing of the data consisted of resampling to 4 msec by removing every other sample, reformatting to SEGY in IBM floating point format, and writing to DLTs. Each 3480 tape was copied as a single file onto the DLTs. Shot numbers of each file on tape are included in Appendix 1.

Description and Results

EW9803 succeeded in meeting all of the data acquisition objectives. Our objectives were to acquire 1620 km of 160-channel seismic reflection data, and record shots on 20 OBSs in two deployments for a total of 32 OBS recordings. Overall, we had few difficulties that delayed us significantly, and we exceeded our expectations for data acquisition. We acquired a total of 1850 km of mcs reflection data, and had 32 OBS deployments and recoveries. All but one of the 32 recorded useable data. Members of the Ewing crew all performed well and deserve much credit for the success.

The data were acquired in two parts. During the first half of the cruise, we deployed all 20 OBSs before deploying the streamer and airguns. After OBS deployment we spent about 12 hours on streamer work to replace some sections, pump it with oil, and add a tow leader section. We deployed 160 active sections with offsets from 125-4225 m. After airgun deployment we began shooting 4 of the 8 strike lines at 100 m shot spacing. We then shot one of the 4 planned dip lines at 50 m shot spacing. The weather remained reasonably calm with 15 - 20 kt. winds while shooting the strike lines, but seas picked up with winds 25-30 kts. while shooting the dip line. While shooting these lines, it became apparent that the streamer was poorly balanced. It sank to 15-20 m in places with following sea or a strong following current. We maintained a speed of 4.8-5.0 kts. over the ground to maintain control of the streamer. With 4 strike lines and one dip line complete, we finished shooting the first half of the acquisition. With some extra time between shooting and recovering OBSs, we did approximately 12 hours of streamer work to determine a fix to the heavy streamer. Lead was removed from much of the streamer and redeployed to test the control. The balanced streamer performed well and was retrieved for OBS recovery.

The second half of the cruise began by redeploying the 12 recovered OBSs, the streamer and airguns. A 100 m section was added to the streamer, making 168 active sections from 125 - 4325 m. The airguns were redeployed, and we began shooting the remaining lines. The last 4 of the 8 strike lines were shot with 125 m shot interval to

minimize previous shot noise on OBS records. The streamer towed well, with variation of +-2 m from the desired 10 m towing depth. After shooting the strike lines, there appeared to be sufficient time to add a 5th dip line that had not been planned. The remaining 4 of the 5 dip lines were shot at 50 m shot spacing and recorded to 17 s. Weather remained calm for all of the strike line shooting and winds picked up to 30 kts. only briefly during the beginning of dip line shooting. The streamer and guns were retrieved and all 20 remaining OBSs were recovered. Throughout the cruise the gun system worked smoothly with few individual gun breakdowns. An example of some of the seismic data is shown in Figure 5, however, this is a preliminary version produced on the ship and it has had little processing. Overall, the data acquisition was very successful.

The main disappointment in the data acquisition was with the seismic streamer and recording system. During the acquisition, we examined the data tapes and shot gathers and we made brute stacks of the reflection data for quality control. It was apparent from the beginning that there were several noise problems with the streamer. Generally between 3 and 5 traces of the 164/168 were too noisy to be at all usable. High amplitude spikes also consistently appeared randomly in the data. Also noted, and particularly apparent in the water column, was a high amplitude 1-2 Hz signal. Bursts of noise in the frequency range of the source signal also appear randomly, lasting for several seconds across several adjacent traces. The source of much of this noise was not determined, but it appeared to worse with higher sea state and we speculate that much of it was generated from towing stress. The lack of a sufficiently long tow leader and stretch sections probably contributed to the noise. In addition to the streamer noise problems, we had numerous lost shots due to tape drive failures. We also had one period of ~15 minutes of lost records due to a crash of the recording system, which resulted in a significant data gap.

Figures

Figure 1. Location map showing the track lines (red) and OBS locations (dots) shot during EW9803. The solid line marks the contact between the overriding and subducting lithosphere. Contour interval is in 1000 m increments.

Figure 2. a) Offset diagram for the *Ewing* showing antenna, streamer, and airgun positions for the first deployment. The first deployment used a 164-channel streamer. b) Offset diagram for the second deployment, which included a 168-channel streamer..

Figure 3. Comparison plots of GPS navigation systems deployed on EW9803 and EW9207 acquired at the dock in Bridgetown. Distribution is plotted in color contours. a) C/A code positions shown at a large scale. b) small-scale blow up of (a). c) y-code receiver positions. d) Differential C/A code positions, from a base station on Barbados.

Figure 4. A model of the source signature calculated from source modeling program Nucleus. The peak to bubble ratio is about 4:1. No streamer ghost is considered.

Figure 5. A preliminary version of a piece of seismic line Dip25, which runs through the center of the survey. Here the line is migrated with water velocity. This profile shows some of the main structural targets of the survey, such as the subducting ocean crust, the accretionary wedge, and possibly the decollement plate-boundary fault. Distance is from the wedge toe to the east.

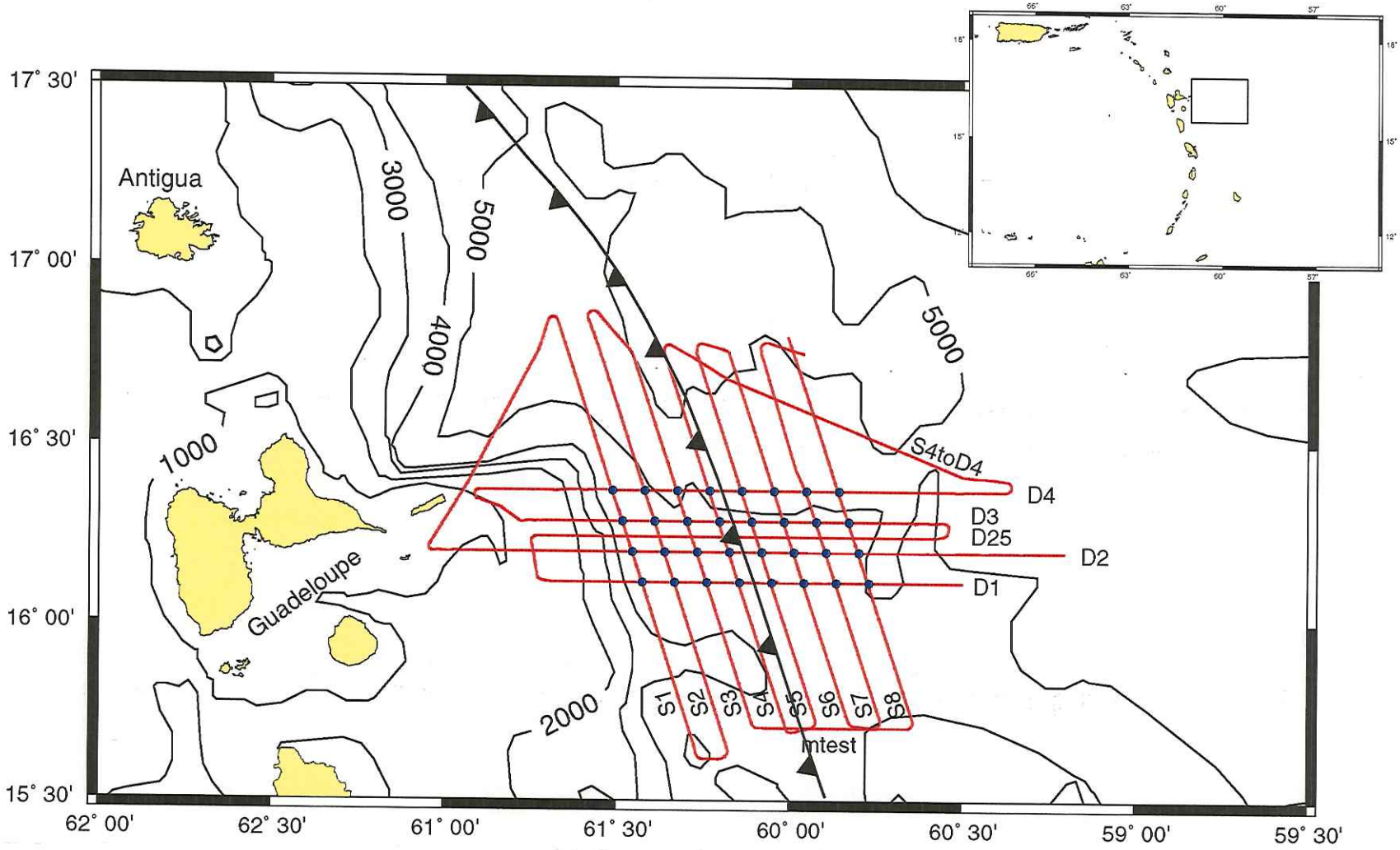
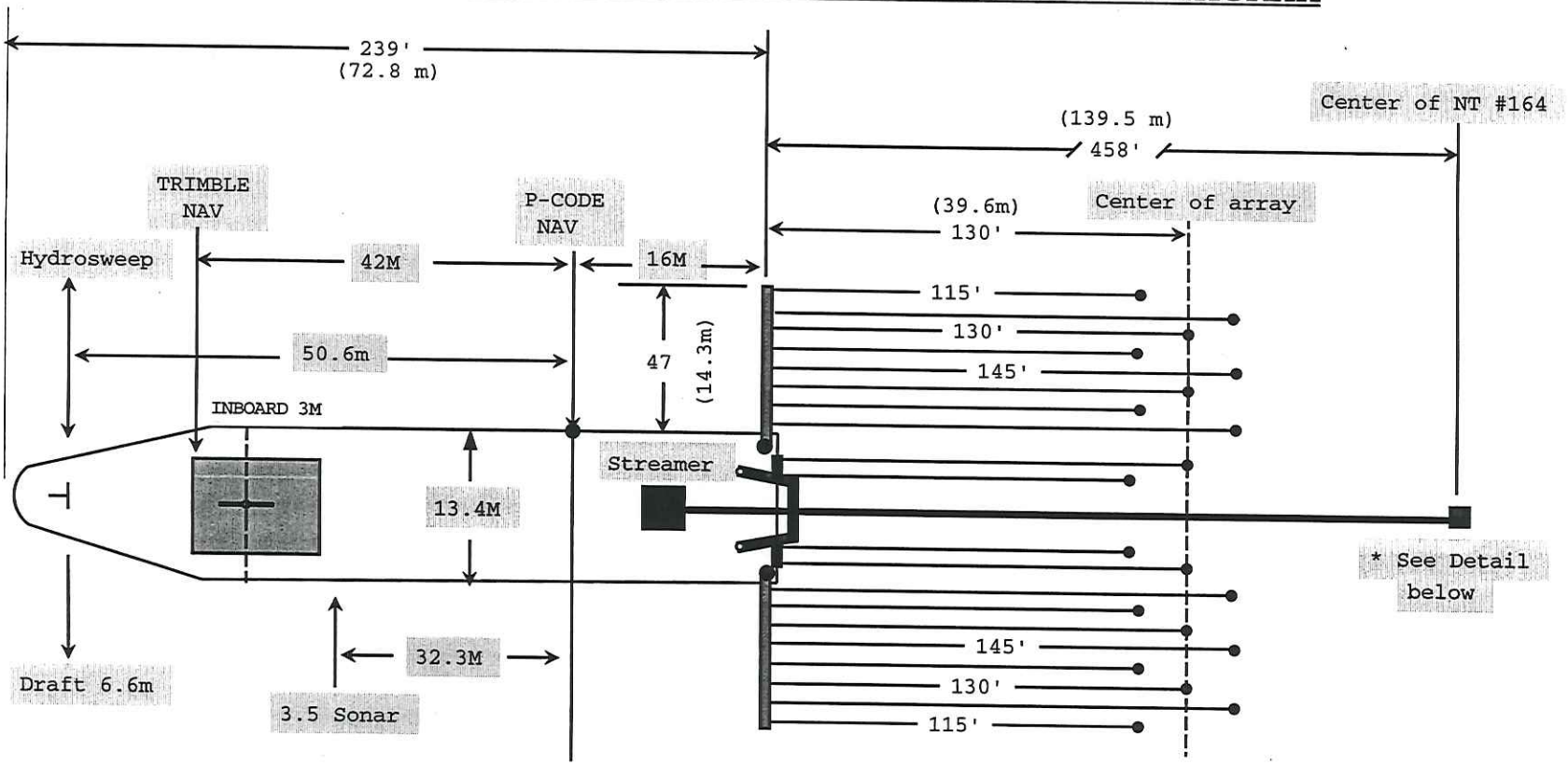

17° 30'
17° 00'
16° 30'
16° 00'
15° 30'
62° 00'
62° 30'
61° 00'
61° 30'
60° 00'
60° 30'
59° 00'
59° 30'
Antigua
Guadeloupe
3000
5000
4000
1000
5000
2000
S4toD4
D4
D3
D25
D2
D1
S1
S2
S3
S4
S5
S6
S7
S8
mtest

Figure 1

MAURICE EWING SETBACK AND OFFSET DIAGRAM



CABLE = 180 CHANNELS 42 ACTIVE SECTIONS IN THE WATER DISREGUARD THE FIRST ACTIVE AS IT IS USED INSTEAD OF A STRETCH SECTION ALSO DISREGUARD CHANNELS 165 AND ABOVE.

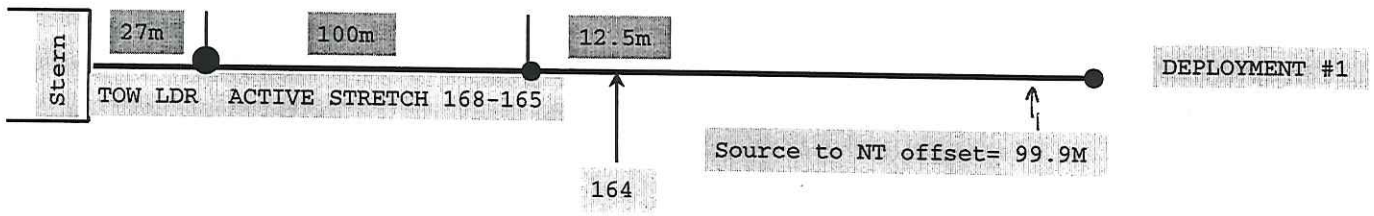
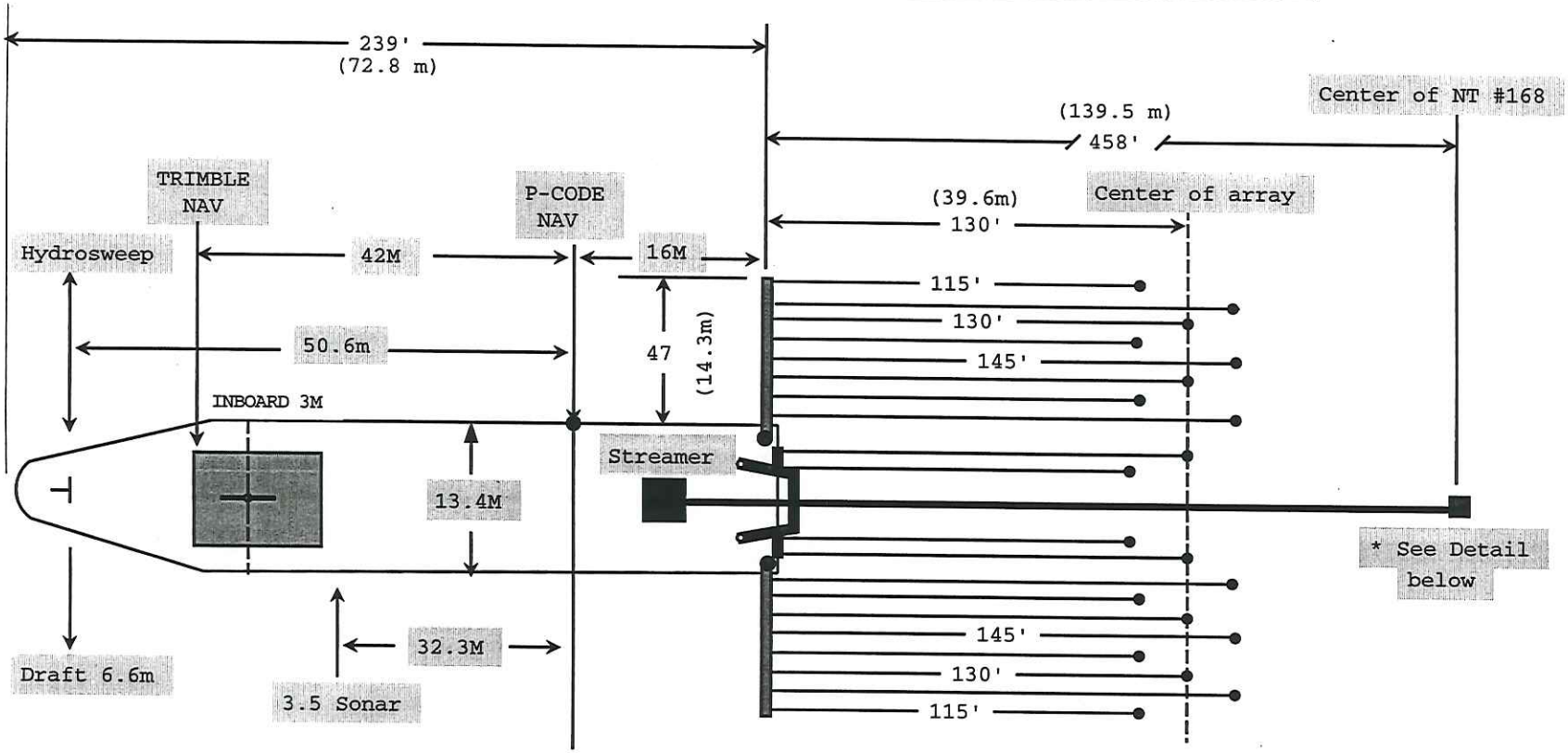


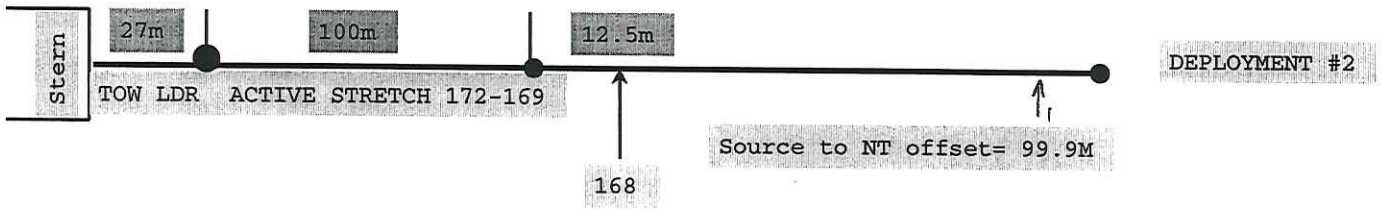
Figure 2a

14 MARCH 1998 cpl Note: Deck measurements were scaled from frame drawing and are approx.

MAURICE EWING SETBACK AND OFFSET DIAGRAM



CABLE = 184 CHANNELS 43 ACTIVE SECTIONS IN THE WATER DISREGUARD THE FIRST ACTIVE AS IT IS USED INSTEAD OF A STRETCH SECTION ALSO DISREGUARD CHANNELS 169 AND ABOVE.



14 MARCH 1998 cpl Note: Deck measurements were scaled from frame drawing and are approx.

Figure 2b

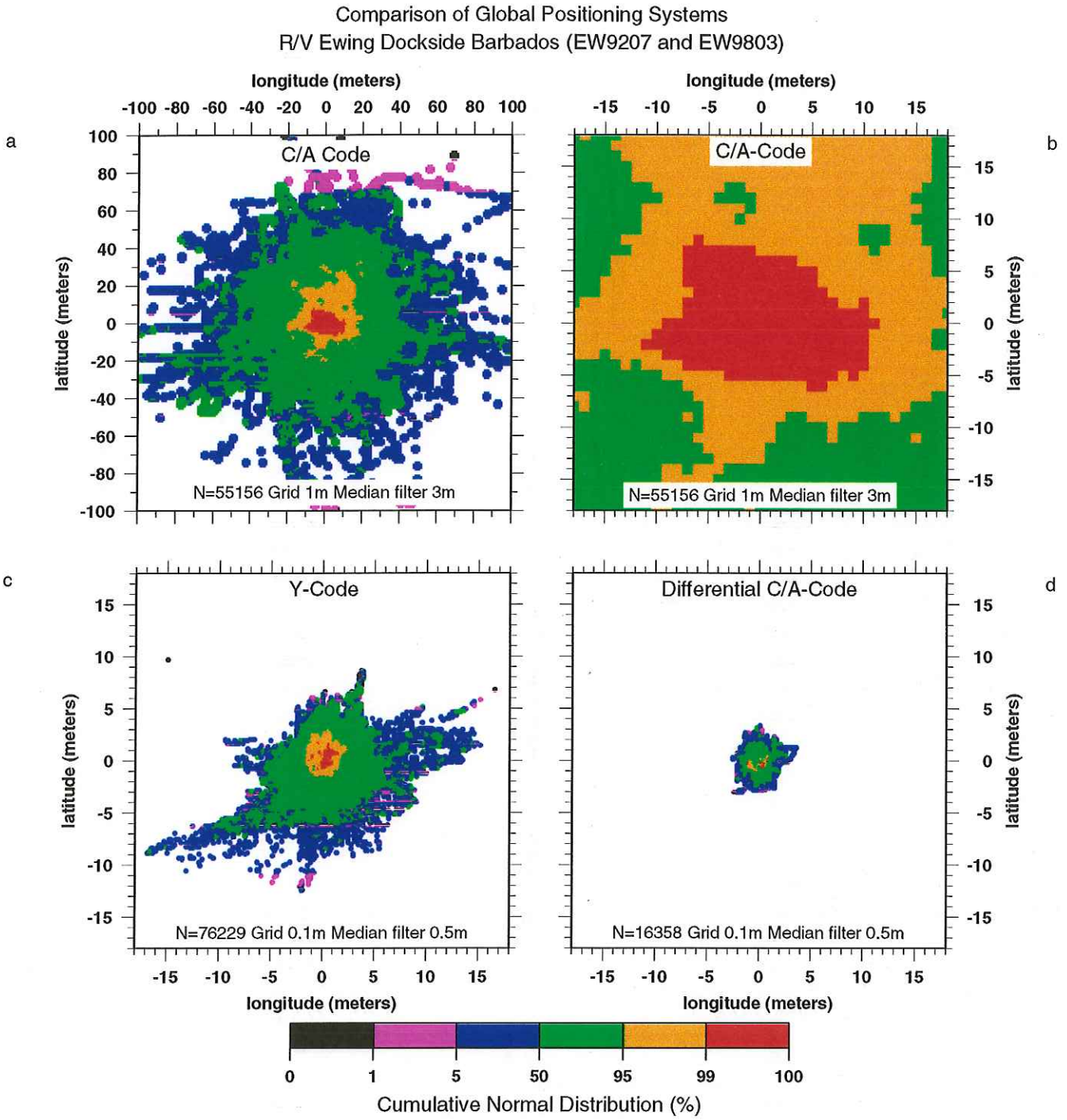

Comparison of Global Positioning Systems
R/V Ewing Dockside Barbados (EW9207 and EW9803)
a
b
c
d
C/A Code
C/A-Code
Y-Code
Differential C/A-Code
N=55156 Grid 1m Median filter 3m
N=55156 Grid 1m Median filter 3m
N=76229 Grid 0.1m Median filter 0.5m
N=16358 Grid 0.1m Median filter 0.5m
longitude (meters)
latitude (meters)
0
1
5
50
95
99
100
Cumulative Normal Distribution (%)

Figure 3

Far-field signature of array: standard

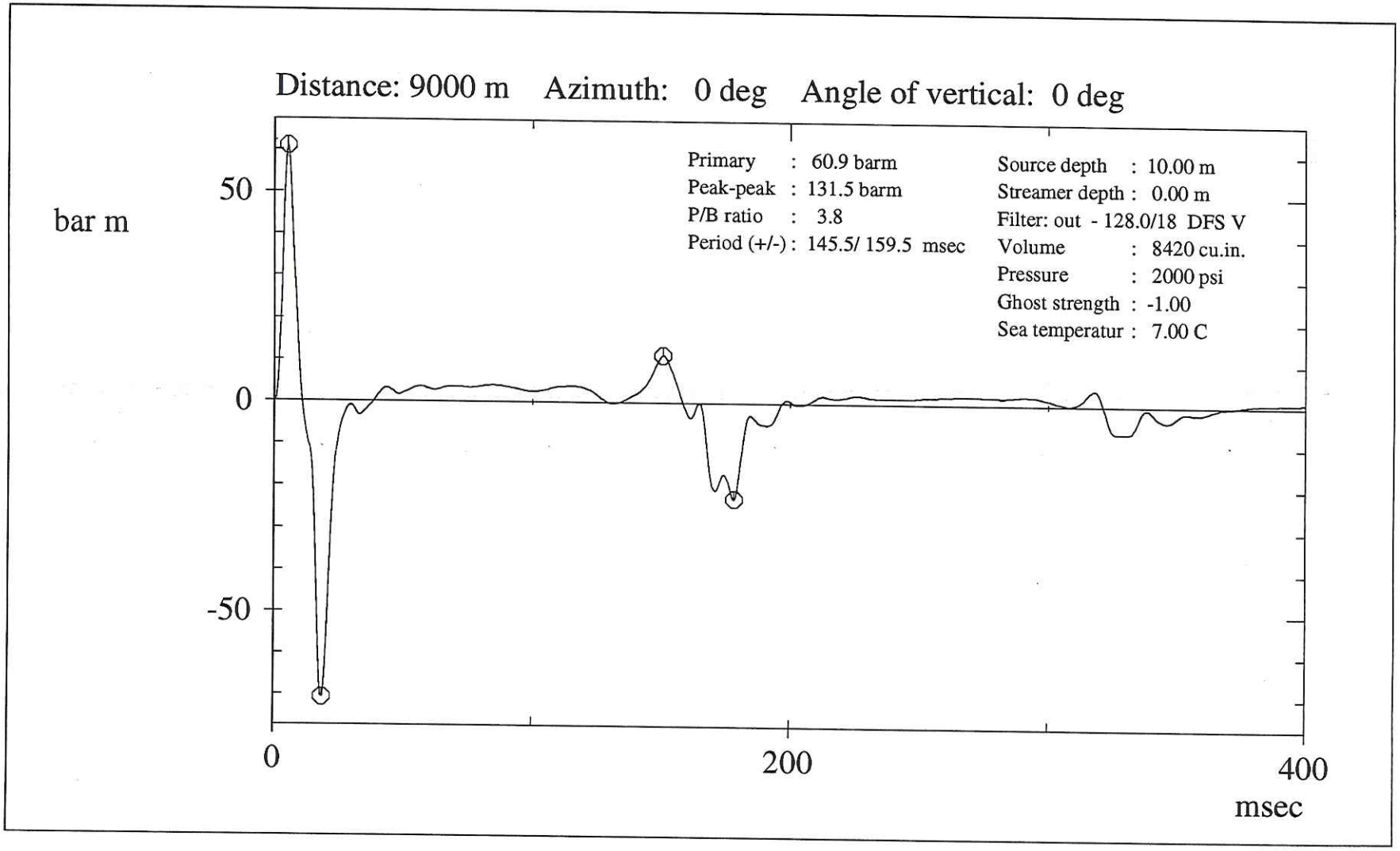


Figure 4

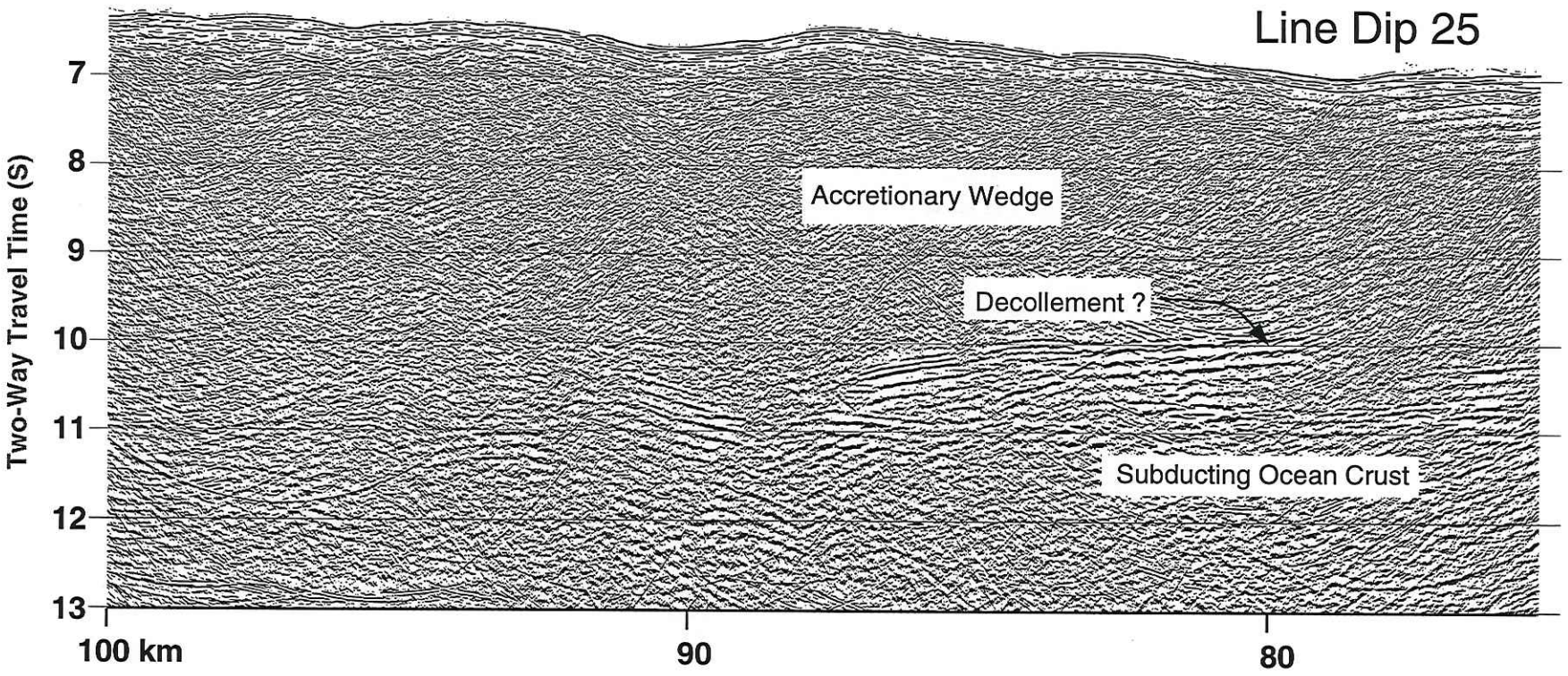

Line Dip 25
Two-Way Travel Time (S)
7
8
9
10
11
12
13
Accretionary Wedge
Decollement ?
Subducting Ocean Crust
100 km
90
80

Figure 5

Appendix 1

Seismic reflection data field tape descriptions

Tape	shots	channels	cdps	samples	interval	length
STRIKE 8						
1	2 - 53	1 - 164	-152 - 419	4608	4000	18672
2	54 - 105	1 - 164	264 - 835	4608	4000	18672
3	106 - 157	1 - 164	680 - 1251	4608	4000	18672
4	158 - 209	1 - 164	1096 - 1667	4608	4000	18672
5	210 - 261	1 - 164	1512 - 2083	4608	4000	18672
6	262 - 313	1 - 164	1928 - 2499	4608	4000	18672
7	314 - 365	1 - 164	2344 - 2915	4608	4000	18672
8	366 - 417	1 - 164	2760 - 3331	4608	4000	18672
9	418 - 469	1 - 164	3176 - 3747	4608	4000	18672
10	470 - 521	1 - 164	3592 - 4163	4608	4000	18672
11	522 - 573	1 - 164	4008 - 4579	4608	4000	18672
12	574 - 625	1 - 164	4424 - 4995	4608	4000	18672
13	626 - 677	1 - 164	4840 - 5411	4608	4000	18672
14	678 - 729	1 - 164	5256 - 5827	4608	4000	18672
15	730 - 781	1 - 164	5672 - 6243	4608	4000	18672
16	782 - 833	1 - 164	6088 - 6659	4608	4000	18672
17	834 - 885	1 - 164	6504 - 7075	4608	4000	18672
18	886 - 922	1 - 164	6920 - 7371	4608	4000	18672
19	924 - 974	1 - 164	7224 - 7787	4608	4000	18672
20	975 - 1026	1 - 164	7632 - 8203	4608	4000	18672
21	1027 - 1078	1 - 164	8048 - 8619	4608	4000	18672
22	1079 - 1130	1 - 164	8464 - 9035	4608	4000	18672
23	1131 - 1182	1 - 164	8880 - 9451	4608	4000	18672
24	1183 - 1234	1 - 164	9296 - 9867	4608	4000	18672
25	1235 - 1287	1 - 102	9712 - 10229	4608	4000	18672
26	1288 - 1339	1 - 164	10136 - 10707	4608	4000	18672
27	1340 - 1391	1 - 164	10552 - 11123	4608	4000	18672
28	1392 - 1417	1 - 164	10968 - 11331	4608	4000	18672
MTEST						
29	2 - 51	1 - 164	-152 - 403	4608	4000	18672
30	52 - 101	1 - 164	248 - 803	4608	4000	18672
31	102 - 151	1 - 164	648 - 1203	4608	4000	18672
32	152 - 201	1 - 164	1048 - 1603	4608	4000	18672
33	202 - 251	1 - 164	1448 - 2003	4608	4000	18672
34	252 - 288	1 - 164	1848 - 2299	4608	4000	18672
STRIKE 3						
35	6 - 55	1 - 164	-120 - 435	4608	4000	18672
36	56 - 105	1 - 164	280 - 835	4608	4000	18672
37	106 - 155	1 - 164	680 - 1235	4608	4000	18672
38	156 - 205	1 - 164	1080 - 1635	4608	4000	18672
39	206 - 255	1 - 164	1480 - 2035	4608	4000	18672
40	256 - 305	1 - 164	1880 - 2435	4608	4000	18672
41	306 - 355	1 - 164	2280 - 2835	4608	4000	18672
42	356 - 405	1 - 164	2680 - 3235	4608	4000	18672

43	406 - 455	1 - 164	3080 - 3635	4608	4000	18672
44	456 - 505	1 - 164	3480 - 4035	4608	4000	18672
45	506 - 555	1 - 164	3880 - 4435	4608	4000	18672
46	556 - 605	1 - 164	4280 - 4835	4608	4000	18672
47	606 - 655	1 - 164	4680 - 5235	4608	4000	18672
48	656 - 705	1 - 164	5080 - 5635	4608	4000	18672
49	706 - 755	1 - 164	5480 - 6035	4608	4000	18672
50	756 - 805	1 - 164	5880 - 6435	4608	4000	18672
51	806 - 855	1 - 164	6280 - 6835	4608	4000	18672
52	856 - 905	1 - 64	6680 - 7135	4608	4000	18672
53	906 - 955	1 - 164	7080 - 7635	4608	4000	18672
54	956 - 1005	1 - 164	7480 - 8035	4608	4000	18672
55	1006 - 1055	1 - 164	7880 - 8435	4608	4000	18672
56	1056 - 1105	1 - 164	8280 - 8835	4608	4000	18672
57	1106 - 1155	1 - 164	8680 - 9235	4608	4000	18672
58	1156 - 1205	1 - 164	9080 - 9635	4608	4000	18672
59	1206 - 1255	1 - 164	9480 - 10035	4608	4000	18672
60	1256 - 1305	1 - 164	9880 - 10435	4608	4000	18672

STRIKE 2 CDP 1196 – 12107

61	1 - 50	1 - 164	-160 - 395	4608	4000	18672
62	51 - 100	1 - 164	240 - 795	4608	4000	18672
63	101 - 150	1 - 164	640 - 1195	4608	4000	18672
64	151 - 200	1 - 164	1040 - 1595	4608	4000	18672
65	201 - 250	1 - 164	1440 - 1995	4608	4000	18672
66	251 - 300	1 - 164	1840 - 2395	4608	4000	18672
67	301 - 350	1 - 164	2240 - 2795	4608	4000	18672
68	351 - 400	1 - 164	2640 - 3195	4608	4000	18672
69	401 - 450	1 - 164	3040 - 3595	4608	4000	18672
70	451 - 500	1 - 164	3440 - 3995	4608	4000	18672
71	501 - 550	1 - 164	3840 - 4395	4608	4000	18672
72	551 - 600	1 - 164	4240 - 4795	4608	4000	18672
73	601 - 650	1 - 164	4640 - 5195	4608	4000	18672
74	651 - 700	1 - 164	5040 - 5595	4608	4000	18672
75	703 - 751	1 - 164	5456 - 6003	4608	4000	18672
76	752 - 801	1 - 164	5848 - 6403	4608	4000	18672
77	802 - 851	1 - 61	6248 - 6700	4608	4000	18672
78	852 - 901	1 - 164	6648 - 7203	4608	4000	18672
79	902 - 951	1 - 164	7048 - 7603	4608	4000	18672
80	952 - 1001	1 - 164	7448 - 8003	4608	4000	18672
81	1002 - 1051	1 - 164	7848 - 8403	4608	4000	18672
82	1052 - 1101	1 - 164	8248 - 8803	4608	4000	18672
83	1102 - 1151	1 - 164	8648 - 9203	4608	4000	18672
84	1152 - 1201	1 - 164	9048 - 9603	4608	4000	18672
85	1202 - 1251	1 - 164	9448 - 10003	4608	4000	18672
86	1252 - 1301	1 - 164	9848 - 10403	4608	4000	18672
87	1302 - 1351	1 - 164	10248 - 10803	4608	4000	18672
88	1352 - 1401	1 - 164	10648 - 11203	4608	4000	18672
89	1402 - 1451	1 - 164	11048 - 11603	4608	4000	18672
90	1452 - 1501	1 - 164	11448 - 12003	4608	4000	18672
91	1502 - 1551	1 - 164	11848 - 12403	4608	4000	18672
92	1552 - 1566	1 - 164	12248 - 12523	4608	4000	18672

STRIKE 1

93	1 - 50	1 - 164	-160 - 395	4608	4000	18672
94	51 - 100	1 - 164	240 - 795	4608	4000	18672
95	101 - 150	1 - 164	640 - 1195	4608	4000	18672
96	151 - 200	1 - 164	1040 - 1595	4608	4000	18672
97	201 - 250	1 - 164	1440 - 1995	4608	4000	18672
98	251 - 300	1 - 98	1840 - 2329	4608	4000	18672
99	301 - 351	1 - 164	2240 - 2803	4608	4000	18672
100	352 - 401	1 - 164	2648 - 3203	4608	4000	18672
101	402 - 452	1 - 164	3048 - 3611	4608	4000	18672
102	453 - 502	1 - 164	3456 - 4011	4608	4000	18672
103	503 - 552	1 - 164	3856 - 4411	4608	4000	18672
104	553 - 602	1 - 164	4256 - 4811	4608	4000	18672
105	603 - 652	1 - 164	4656 - 5211	4608	4000	18672
106	653 - 702	1 - 164	5056 - 5611	4608	4000	18672
107	703 - 752	1 - 164	5456 - 6011	4608	4000	18672
108	753 - 802	1 - 164	5856 - 6411	4608	4000	18672
109	803 - 852	1 - 164	6256 - 6811	4608	4000	18672
110	853 - 902	1 - 164	6656 - 7211	4608	4000	18672
111	903 - 952	1 - 164	7056 - 7611	4608	4000	18672
112	953 - 1002	1 - 164	7456 - 8011	4608	4000	18672
113	1003 - 1052	1 - 164	7856 - 8411	4608	4000	18672
114	1053 - 1102	1 - 164	8256 - 8811	4608	4000	18672
115	1103 - 1152	1 - 164	8656 - 9211	4608	4000	18672
116	1153 - 1202	1 - 164	9056 - 9611	4608	4000	18672
117	1203 - 1252	1 - 164	9456 - 10011	4608	4000	18672
118	1253 - 1302	1 - 164	9856 - 10411	4608	4000	18672
119	1303 - 1352	1 - 164	10256 - 10811	4608	4000	18672
120	1353 - 1402	1 - 164	10656 - 11211	4608	4000	18672
121	1403 - 1452	1 - 164	11056 - 11611	4608	4000	18672
122	1453 - 1502	1 - 164	11456 - 12011	4608	4000	18672
123	1503 - 1552	1 - 164	11856 - 12411	4608	4000	18672
124	1553 - 1602	1 - 164	12256 - 12811	4608	4000	18672
125	1603 - 1652	1 - 164	12656 - 13211	4608	4000	18672
126	1653 - 1702	1 - 164	13056 - 13611	4608	4000	18672
127	1703 - 1753	1 - 164	13456 - 14019	4608	4000	18672
128	1754 - 1803	1 - 164	13864 - 14419	4608	4000	18672
129	1804 - 1853	1 - 164	14264 - 14819	4608	4000	18672
130	1854 - 1903	1 - 164	14664 - 15219	4608	4000	18672
131	1904 - 1953	1 - 164	15064 - 15619	4608	4000	18672
132	1954 - 2003	1 - 164	15464 - 16019	4608	4000	18672
133	2004 - 2053	1 - 164	15864 - 16419	4608	4000	18672
134	2054 - 2103	1 - 164	16264 - 16819	4608	4000	18672
135	2104 - 2153	1 - 164	16664 - 17219	4608	4000	18672
136	2154 - 2203	1 - 164	17064 - 17619	4608	4000	18672
137	2204 - 2253	1 - 164	17464 - 18019	4608	4000	18672
138	2254 - 2285	1 - 164	17864 - 18275	4608	4000	18672

DIP2

139	2 - 56	1 - 164	-160 - 219	4096	4000	16624
140	57 - 113	1 - 164	60 - 447	4096	4000	16624
141	114 - 168	1 - 164	288 - 667	4096	4000	16624
142	169 - 223	1 - 164	508 - 887	4096	4000	16624
143	224 - 278	1 - 164	728 - 1107	4096	4000	16624
144	279 - 333	1 - 164	948 - 1327	4096	4000	16624

145	334 - 388	1 - 164	1168 - 1547	4096	4000	16624
146	389 - 444	1 - 164	1388 - 1771	4096	4000	16624
147	445 - 499	1 - 164	1612 - 1991	4096	4000	16624
148	500 - 555	1 - 164	1832 - 2215	4096	4000	16624
149	556 - 610	1 - 164	2056 - 2435	4096	4000	16624
150	611 - 665	1 - 164	2276 - 2655	4096	4000	16624
151	666 - 720	1 - 164	2496 - 2875	4096	4000	16624
152	721 - 775	1 - 164	2716 - 3095	4096	4000	16624
153	776 - 830	1 - 164	2936 - 3315	4096	4000	16624
154	831 - 885	1 - 164	3156 - 3535	4096	4000	16624
155	886 - 940	1 - 164	3376 - 3755	4096	4000	16624
156	941 - 999	1 - 164	3596 - 3991	4096	4000	16624
157	1000 - 1056	1 - 164	3832 - 4219	4096	4000	16624
158	1057 - 1113	1 - 164	4060 - 4447	4096	4000	16624
159	1114 - 1168	1 - 164	4288 - 4667	4096	4000	16624
160	1170 - 1226	1 - 164	4512 - 4899	4096	4000	16624
161	1227 - 1283	1 - 164	4740 - 5127	4096	4000	16624
162	1284 - 1340	1 - 164	4968 - 5355	4096	4000	16624
163	1341 - 1395	1 - 164	5196 - 5575	4096	4000	16624
164	1396 - 1450	1 - 164	5416 - 5795	4096	4000	16624
165	1451 - 1505	1 - 164	5636 - 6015	4096	4000	16624
166	1506 - 1561	1 - 164	5856 - 6239	4096	4000	16624
167	1562 - 1616	1 - 164	6080 - 6459	4096	4000	16624
168	1617 - 1671	1 - 164	6300 - 6679	4096	4000	16624
169	1672 - 1726	1 - 164	6520 - 6899	4096	4000	16624
170	1727 - 1781	1 - 164	6740 - 7119	4096	4000	16624
171	1782 - 1836	1 - 164	6960 - 7339	4096	4000	16624
172	1837 - 1891	1 - 164	7180 - 7559	4096	4000	16624
173	1892 - 1946	1 - 164	7400 - 7779	4096	4000	16624
174	1947 - 2002	1 - 164	7620 - 8003	4096	4000	16624
175	2003 - 2057	1 - 164	7844 - 8223	4096	4000	16624
176	2058 - 2113	1 - 164	8064 - 8447	4096	4000	16624
177	2114 - 2168	1 - 164	8288 - 8667	4096	4000	16624
178	2169 - 2223	1 - 164	8508 - 8887	4096	4000	16624
179	2224 - 2278	1 - 164	8728 - 9107	4096	4000	16624
180	2279 - 2333	1 - 164	8948 - 9327	4096	4000	16624
181	2339 - 2392	1 - 164	9188 - 9563	4096	4000	16624
182	2393 - 2447	1 - 164	9404 - 9783	4096	4000	16624
183	2448 - 2502	1 - 164	9624 - 10003	4096	4000	16624
184	2503 - 2514	1 - 95	9844 - 9982	4096	4000	16624
185	2516 - 2569	1 - 164	9896 - 10271	4096	4000	16624
186	2570 - 2625	1 - 164	10112 - 10495	4096	4000	16624
187	2626 - 2681	1 - 164	10336 - 10719	4096	4000	16624
188	2682 - 2737	1 - 164	10560 - 10943	4096	4000	16624
189	2738 - 2792	1 - 164	10784 - 11163	4096	4000	16624
190	2793 - 2847	1 - 164	11004 - 11383	4096	4000	16624
191	2848 - 2902	1 - 164	11224 - 11603	4096	4000	16624
192	2903 - 2957	1 - 164	11444 - 11823	4096	4000	16624
193	2958 - 3012	1 - 164	11664 - 12043	4096	4000	16624
194	3013 - 3067	1 - 164	11884 - 12263	4096	4000	16624
195	3068 - 3122	1 - 164	12104 - 12483	4096	4000	16624
196	3123 - 3177	1 - 164	12324 - 12703	4096	4000	16624
197	3178 - 3232	1 - 164	12544 - 12923	4096	4000	16624
198	3233 - 3287	1 - 164	12764 - 13143	4096	4000	16624

199	3288 - 3342	1 - 164	12984 - 13363	4096	4000	16624
200	3343 - 3397	1 - 164	13204 - 13583	4096	4000	16624
201	3398 - 3452	1 - 164	13424 - 13803	4096	4000	16624
202	3453 - 3507	1 - 164	13644 - 14023	4096	4000	16624
203	3508 - 3562	1 - 164	13864 - 14243	4096	4000	16624
204	3563 - 3617	1 - 164	14084 - 14463	4096	4000	16624
205	3618 - 3672	1 - 164	14304 - 14683	4096	4000	16624
206	3673 - 3727	1 - 164	14524 - 14903	4096	4000	16624
207	3728 - 3782	1 - 164	14744 - 15123	4096	4000	16624
208	3783 - 3837	1 - 164	14964 - 15343	4096	4000	16624
209	3838 - 3892	1 - 164	15184 - 15563	4096	4000	16624
210	3893 - 3947	1 - 164	15404 - 15783	4096	4000	16624
211	3948 - 3999	1 - 164	15624 - 15991	4096	4000	16624

STRIKE 7

212	3 - 50	1 - 168	-142 - 495	4608	4000	18672
213	51 - 99	1 - 168	338 - 985	4608	4000	18672
214	100 - 148	1 - 168	828 - 1475	4608	4000	18672
215	149 - 197	1 - 168	1318 - 1965	4608	4000	18672
216	198 - 246	1 - 168	1808 - 2455	4608	4000	18672
217	247 - 295	1 - 168	2298 - 2945	4608	4000	18672
218	296 - 344	1 - 168	2788 - 3435	4608	4000	18672
219	345 - 393	1 - 168	3278 - 3925	4608	4000	18672
220	394 - 442	1 - 168	3768 - 4415	4608	4000	18672
221	443 - 491	1 - 168	4258 - 4905	4608	4000	18672
222	492 - 540	1 - 168	4748 - 5395	4608	4000	18672
223	541 - 589	1 - 168	5238 - 5885	4608	4000	18672
224	590 - 638	1 - 168	5728 - 6375	4608	4000	18672
225	639 - 687	1 - 168	6218 - 6865	4608	4000	18672
226	688 - 736	1 - 168	6708 - 7355	4608	4000	18672
227	737 - 785	1 - 168	7198 - 7845	4608	4000	18672
228	786 - 834	1 - 168	7688 - 8335	4608	4000	18672
229	835 - 883	1 - 168	8178 - 8825	4608	4000	18672
230	884 - 932	1 - 168	8668 - 9315	4608	4000	18672
231	933 - 981	1 - 168	9158 - 9805	4608	4000	18672
232	982 - 1030	1 - 168	9648 - 10295	4608	4000	18672
233	1031 - 1079	1 - 168	10138 - 10785	4608	4000	18672
234	1080 - 1128	1 - 168	10628 - 11275	4608	4000	18672
235	1129 - 1171	1 - 168	11118 - 11705	4608	4000	18672

STRIKE 6

236	1 - 49	1 - 168	-162 - 485	4608	4000	18672
237	50 - 98	1 - 168	328 - 975	4608	4000	18672
238	99 - 147	1 - 168	818 - 1465	4608	4000	18672
239	148 - 196	1 - 168	1308 - 1955	4608	4000	18672
240	197 - 245	1 - 100	1798 - 2377	4608	4000	18672
241	246 - 294	1 - 168	2288 - 2935	4608	4000	18672
242	295 - 343	1 - 168	2778 - 3425	4608	4000	18672
243	344 - 392	1 - 168	3268 - 3915	4608	4000	18672
244	393 - 441	1 - 168	3758 - 4405	4608	4000	18672
245	442 - 490	1 - 168	4248 - 4895	4608	4000	18672
246	491 - 539	1 - 168	4738 - 5385	4608	4000	18672
247	540 - 588	1 - 168	5228 - 5875	4608	4000	18672
248	589 - 637	1 - 168	5718 - 6365	4608	4000	18672

249	638 - 686	1 - 168	6208 - 6855	4608	4000	18672
250	687 - 735	1 - 168	6698 - 7345	4608	4000	18672
251	736 - 784	1 - 168	7188 - 7835	4608	4000	18672
252	785 - 833	1 - 168	7678 - 8325	4608	4000	18672
253	834 - 882	1 - 168	8168 - 8815	4608	4000	18672
254	883 - 931	1 - 168	8658 - 9305	4608	4000	18672
255	932 - 980	1 - 168	9148 - 9795	4608	4000	18672
256	981 - 101	1 - 168	9638 - 10155	4608	4000	18672

STRIKE 5

257	1 - 49	1 - 168	-162 - 485	4608	4000	18672
258	50 - 98	1 - 168	328 - 975	4608	4000	18672
259	99 - 147	1 - 168	818 - 1465	4608	4000	18672
260	148 - 196	1 - 168	1308 - 1955	4608	4000	18672
261	200 - 247	1 - 168	1828 - 2465	4608	4000	18672
262	248 - 296	1 - 168	2308 - 2955	4608	4000	18672
263	297 - 345	1 - 168	2798 - 3445	4608	4000	18672
264	346 - 394	1 - 168	3288 - 3935	4608	4000	18672
265	395 - 443	1 - 168	3778 - 4425	4608	4000	18672
266	444 - 492	1 - 168	4268 - 4915	4608	4000	18672
267	493 - 541	1 - 168	4758 - 5405	4608	4000	18672
268	542 - 590	1 - 168	5248 - 5895	4608	4000	18672
269	591 - 639	1 - 168	5738 - 6385	4608	4000	18672
270	640 - 688	1 - 168	6228 - 6875	4608	4000	18672
271	689 - 737	1 - 168	6718 - 7365	4608	4000	18672
272	738 - 786	1 - 168	7208 - 7855	4608	4000	18672
273	787 - 835	1 - 168	7698 - 8345	4608	4000	18672
274	836 - 884	1 - 168	8188 - 8835	4608	4000	18672
275	885 - 933	1 - 168	8678 - 9325	4608	4000	18672
276	934 - 982	1 - 168	9168 - 9815	4608	4000	18672
277	983 - 103	1 - 168	9658 - 10305	4608	4000	18672
278	1032 - 108	1 - 168	10148 - 10795	4608	4000	18672

STRIKE 4

279	1 - 49	1 - 168	-162 - 485	4608	4000	18672
280	50 - 98	1 - 168	328 - 975	4608	4000	18672
281	99 - 147	1 - 168	818 - 1465	4608	4000	18672
282	148 - 196	1 - 168	1308 - 1955	4608	4000	18672
283	197 - 245	1 - 168	1798 - 2445	4608	4000	18672
284	246 - 294	1 - 168	2288 - 2935	4608	4000	18672
285	295 - 343	1 - 168	2778 - 3425	4608	4000	18672
286	344 - 392	1 - 168	3268 - 3915	4608	4000	18672
287	393 - 441	1 - 168	3758 - 4405	4608	4000	18672
288	442 - 490	1 - 168	4248 - 4895	4608	4000	18672
289	491 - 539	1 - 168	4738 - 5385	4608	4000	18672
290	540 - 588	1 - 168	5228 - 5875	4608	4000	18672
291	589 - 637	1 - 168	5718 - 6365	4608	4000	18672
292	638 - 686	1 - 168	6208 - 6855	4608	4000	18672
293	687 - 735	1 - 168	6698 - 7345	4608	4000	18672
294	736 - 784	1 - 168	7188 - 7835	4608	4000	18672
295	785 - 833	1 - 168	7678 - 8325	4608	4000	18672
296	834 - 882	1 - 168	8168 - 8815	4608	4000	18672
297	883 - 931	1 - 168	8658 - 9305	4608	4000	18672
298	932 - 980	1 - 168	9148 - 9795	4608	4000	18672

299	981 - 1029	1 - 168	9638 - 10285	4608	4000	18672
300	1030 - 1054	1 - 168	10128 - 10535	4608	4000	18672

STRIKE 4 to DIP4

301	2 - 50	1 - 168	-152 - 495	4608	4000	18672
302	51 - 99	1 - 168	338 - 985	4608	4000	18672
303	100 - 148	1 - 168	828 - 1475	4608	4000	18672
304	149 - 197	1 - 168	1318 - 1965	4608	4000	18672
305	198 - 246	1 - 168	1808 - 2455	4608	4000	18672
306	247 - 295	1 - 168	2298 - 2945	4608	4000	18672
307	296 - 344	1 - 168	2788 - 3435	4608	4000	18672
308	345 - 393	1 - 168	3278 - 3925	4608	4000	18672
309	394 - 443	1 - 168	3768 - 4425	4608	4000	18672
310	444 - 492	1 - 168	4268 - 4915	4608	4000	18672
311	493 - 541	1 - 168	4758 - 5405	4608	4000	18672
312	542 - 590	1 - 168	5248 - 5895	4608	4000	18672
313	591 - 639	1 - 168	5738 - 6385	4608	4000	18672
314	640 - 688	1 - 168	6228 - 6875	4608	4000	18672
315	689 - 737	1 - 168	6718 - 7365	4608	4000	18672
316	738 - 786	1 - 168	7208 - 7855	4608	4000	18672
317	787 - 835	1 - 168	7698 - 8345	4608	4000	18672
318	836 - 877	1 - 168	8188 - 8765	4608	4000	18672

DIP 4

319	1 - 52	1 - 168	-168 - 203	4352	4000	17648
320	53 - 104	1 - 168	40 - 411	4352	4000	17648
321	105 - 156	1 - 168	248 - 619	4352	4000	17648
322	157 - 208	1 - 168	456 - 827	4352	4000	17648
323	212 - 261	1 - 168	676 - 1039	4352	4000	17648
324	262 - 315	1 - 168	876 - 1255	4352	4000	17648
325	316 - 367	1 - 168	1092 - 1463	4352	4000	17648
326	368 - 419	1 - 168	1300 - 1671	4352	4000	17648
327	420 - 472	1 - 168	1508 - 1883	4352	4000	17648
328	473 - 525	1 - 168	1720 - 2095	4352	4000	17648
329	526 - 577	1 - 168	1932 - 2303	4352	4000	17648
330	578 - 629	1 - 168	2140 - 2511	4352	4000	17648
331	630 - 681	1 - 168	2348 - 2719	4352	4000	17648
332	682 - 734	1 - 168	2556 - 2931	4352	4000	17648
333	735 - 786	1 - 168	2768 - 3139	4352	4000	17648
334	787 - 838	1 - 168	2976 - 3347	4352	4000	17648
335	839 - 892	1 - 168	3184 - 3563	4352	4000	17648
336	949 - 1000	1 - 168	3624 - 3995	4352	4000	17648
337	1001 - 1052	1 - 168	3832 - 4203	4352	4000	17648
338	1058 - 1108	1 - 168	4060 - 4427	4352	4000	17648
339	1109 - 1160	1 - 168	4264 - 4635	4352	4000	17648
340	1161 - 1212	1 - 168	4472 - 4843	4352	4000	17648
341	1213 - 1264	1 - 168	4680 - 5051	4352	4000	17648
342	1265 - 1316	1 - 168	4888 - 5259	4352	4000	17648
343	1317 - 1368	1 - 168	5096 - 5467	4352	4000	17648
344	1369 - 1428	1 - 168	5304 - 5707	4352	4000	17648
345	1429 - 1481	1 - 168	5544 - 5919	4352	4000	17648
346	1482 - 1533	1 - 168	5756 - 6127	4352	4000	17648
347	1534 - 1585	1 - 168	5964 - 6335	4352	4000	17648
348	1586 - 1637	1 - 168	6172 - 6543	4352	4000	17648

349	1638 - 1689	1 - 168	6380 - 6751	4352	4000	17648
350	1690 - 1741	1 - 168	6588 - 6959	4352	4000	17648
351	1742 - 1793	1 - 168	6796 - 7167	4352	4000	17648
352	1794 - 1845	1 - 168	7004 - 7375	4352	4000	17648
353	1846 - 1897	1 - 168	7212 - 7583	4352	4000	17648
354	1898 - 1949	1 - 168	7420 - 7791	4352	4000	17648
355	1950 - 2001	1 - 168	7628 - 7999	4352	4000	17648
356	2002 - 2053	1 - 168	7836 - 8207	4352	4000	17648
357	2054 - 2105	1 - 168	8044 - 8415	4352	4000	17648
358	2106 - 2157	1 - 168	8252 - 8623	4352	4000	17648
359	2163 - 2213	1 - 168	8480 - 8847	4352	4000	17648
360	2214 - 2265	1 - 168	8684 - 9055	4352	4000	17648
361	2266 - 2317	1 - 168	8892 - 9263	4352	4000	17648
362	2318 - 2369	1 - 168	9100 - 9471	4352	4000	17648
363	2370 - 2421	1 - 168	9308 - 9679	4352	4000	17648
364	2422 - 2477	1 - 168	9516 - 9903	4352	4000	17648
365	2478 - 2529	1 - 168	9740 - 10111	4352	4000	17648
366	2530 - 2581	1 - 168	9948 - 10319	4352	4000	17648
367	2582 - 2636	1 - 168	10156 - 10539	4352	4000	17648
368	2637 - 2688	1 - 168	10376 - 10747	4352	4000	17648
369	2689 - 2740	1 - 168	10584 - 10955	4352	4000	17648
370	2748 - 2797	1 - 168	10820 - 11183	4352	4000	17648
371	2798 - 2849	1 - 168	11020 - 11391	4352	4000	17648
372	2859 - 2909	1 - 168	11264 - 11631	4352	4000	17648
373	2910 - 2961	1 - 168	11468 - 11839	4352	4000	17648
374	2962 - 3013	1 - 168	11676 - 12047	4352	4000	17648
375	3014 - 3065	1 - 168	11884 - 12255	4352	4000	17648
376	3066 - 3117	1 - 168	12092 - 12463	4352	4000	17648
377	3118 - 3169	1 - 168	12300 - 12671	4352	4000	17648
378	3170 - 3221	1 - 42	12508 - 12753	4352	4000	17648
379	3222 - 3273	1 - 168	12716 - 13087	4352	4000	17648
380	3274 - 3325	1 - 168	12924 - 13295	4352	4000	17648
381	3329 - 3372	1 - 168	13144 - 13483	4352	4000	17648

DIP 3

382	1 - 52	1 - 168	-168 - 203	4352	4000	17648
383	53 - 104	1 - 168	40 - 411	4352	4000	17648
384	105 - 157	1 - 168	248 - 623	4352	4000	17648
385	158 - 209	1 - 168	460 - 831	4352	4000	17648
386	210 - 261	1 - 168	668 - 1039	4352	4000	17648
387	262 - 313	1 - 168	876 - 1247	4352	4000	17648
388	314 - 365	1 - 168	1084 - 1455	4352	4000	17648
389	366 - 417	1 - 168	1292 - 1663	4352	4000	17648
390	418 - 469	1 - 168	1500 - 1871	4352	4000	17648
391	470 - 521	1 - 168	1708 - 2079	4352	4000	17648
392	522 - 573	1 - 168	1916 - 2287	4352	4000	17648
393	574 - 625	1 - 168	2124 - 2495	4352	4000	17648
394	626 - 677	1 - 168	2332 - 2703	4352	4000	17648
395	678 - 729	1 - 168	2540 - 2911	4352	4000	17648
396	730 - 781	1 - 168	2748 - 3119	4352	4000	17648
397	782 - 833	1 - 168	2956 - 3327	4352	4000	17648
398	834 - 885	1 - 168	3164 - 3535	4352	4000	17648
399	886 - 937	1 - 168	3372 - 3743	4352	4000	17648
400	938 - 989	1 - 168	3580 - 3951	4352	4000	17648

20 401	990 - 1041	1 - 168	3788 - 4159	4352	4000	17648
21 402	1042 - 1093	1 - 168	3996 - 4367	4352	4000	17648
22 403	1094 - 1150	1 - 168	4204 - 4595	4352	4000	17648
23 404	1151 - 1204	1 - 168	4432 - 4811	4352	4000	17648
24 405	1205 - 1256	1 - 168	4648 - 5019	4352	4000	17648
25 406	1257 - 1308	1 - 168	4856 - 5227	4352	4000	17648
26 407	1309 - 1360	1 - 168	5064 - 5435	4352	4000	17648
27 408	1361 - 1413	1 - 168	5272 - 5647	4352	4000	17648
28 409	1414 - 1465	1 - 168	5484 - 5855	4352	4000	17648
29 410	1466 - 1517	1 - 168	5692 - 6063	4352	4000	17648
30 411	1518 - 1570	1 - 168	5900 - 6275	4352	4000	17648
31 412	1571 - 1622	1 - 168	6112 - 6483	4352	4000	17648
32 413	1623 - 1674	1 - 168	6320 - 6691	4352	4000	17648
33 414	1675 - 1727	1 - 168	6528 - 6903	4352	4000	17648
34 415	1728 - 1779	1 - 168	6740 - 7111	4352	4000	17648
35 416	1780 - 1831	1 - 168	6948 - 7319	4352	4000	17648
36 417	1832 - 1883	1 - 168	7156 - 7527	4352	4000	17648
37 418	1884 - 1935	1 - 168	7364 - 7735	4352	4000	17648
38 419	1936 - 1987	1 - 168	7572 - 7943	4352	4000	17648
39 420	1988 - 2039	1 - 168	7780 - 8151	4352	4000	17648
40 421	2040 - 2091	1 - 168	7988 - 8359	4352	4000	17648
41 422	2092 - 2143	1 - 168	8196 - 8567	4352	4000	17648
42 423	2144 - 2195	1 - 168	8404 - 8775	4352	4000	17648
43 424	2196 - 2247	1 - 168	8612 - 8983	4352	4000	17648
44 425	2248 - 2299	1 - 168	8820 - 9191	4352	4000	17648
45 426	2300 - 2351	1 - 168	9028 - 9399	4352	4000	17648
46 427	2352 - 2403	1 - 168	9236 - 9607	4352	4000	17648
47 428	2404 - 2455	1 - 168	9444 - 9815	4352	4000	17648
48 429	2456 - 2507	1 - 168	9652 - 10023	4352	4000	17648
49 430	2508 - 2559	1 - 168	9860 - 10231	4352	4000	17648
50 431	2560 - 2611	1 - 168	10068 - 10439	4352	4000	17648
51 432	2612 - 2664	1 - 168	10276 - 10651	4352	4000	17648
52 433	2665 - 2722	1 - 168	10488 - 10883	4352	4000	17648
53 434	2723 - 2778	1 - 168	10720 - 11107	4352	4000	17648
54 435	2779 - 2832	1 - 168	10944 - 11323	4352	4000	17648
55 436	2837 - 2887	1 - 168	11176 - 11543	4352	4000	17648
56 437	2888 - 2938	1 - 168	11380 - 11747	4352	4000	17648

DIP 25

1 438	2 - 53	1 - 168	-164 - 207	4352	4000	17648
2 439	54 - 105	1 - 168	44 - 415	4352	4000	17648
3 440	106 - 157	1 - 168	252 - 623	4352	4000	17648
4 441	158 - 209	1 - 168	460 - 831	4352	4000	17648
5 442	210 - 261	1 - 168	668 - 1039	4352	4000	17648
6 443	262 - 313	1 - 168	876 - 1247	4352	4000	17648
7 444	314 - 365	1 - 168	1084 - 1455	4352	4000	17648
8 445	366 - 418	1 - 144	1292 - 1643	4352	4000	17648
9 446	419 - 471	1 - 168	1504 - 1879	4352	4000	17648
10 447	472 - 524	1 - 168	1716 - 2091	4352	4000	17648
11 448	525 - 576	1 - 168	1928 - 2299	4352	4000	17648
12 449	577 - 628	1 - 168	2136 - 2507	4352	4000	17648
13 450	633 - 684	1 - 168	2360 - 2731	4352	4000	17648
14 451	685 - 736	1 - 168	2568 - 2939	4352	4000	17648
15 452	737 - 788	1 - 168	2776 - 3147	4352	4000	17648

16 453	789 - 840	1 - 168	2984 - 3355	4352	4000	17648
17 454	841 - 892	1 - 168	3192 - 3563	4352	4000	17648
18 455	893 - 944	1 - 168	3400 - 3771	4352	4000	17648
19 456	945 - 996	1 - 168	3608 - 3979	4352	4000	17648
20 457	997 - 1048	1 - 168	3816 - 4187	4352	4000	17648
21 458	1049 - 1100	1 - 168	4024 - 4395	4352	4000	17648
22 459	1101 - 1152	1 - 168	4232 - 4603	4352	4000	17648
23 460	1153 - 1204	1 - 168	4440 - 4811	4352	4000	17648
24 461	1205 - 1256	1 - 168	4648 - 5019	4352	4000	17648
25 462	1257 - 1309	1 - 168	4856 - 5231	4352	4000	17648
26 463	1310 - 1362	1 - 168	5068 - 5443	4352	4000	17648
27 464	1363 - 1414	1 - 168	5280 - 5651	4352	4000	17648
28 465	1415 - 1466	1 - 168	5488 - 5859	4352	4000	17648
29 466	1467 - 1518	1 - 168	5696 - 6067	4352	4000	17648
30 467	1519 - 1570	1 - 168	5904 - 6275	4352	4000	17648
31 468	1575 - 1626	1 - 168	6128 - 6499	4352	4000	17648
32 469	1627 - 1678	1 - 168	6336 - 6707	4352	4000	17648
33 470	1679 - 1730	1 - 65	6544 - 6812	4352	4000	17648
34 471	1731 - 1782	1 - 168	6752 - 7123	4352	4000	17648
35 472	1783 - 1834	1 - 168	6960 - 7331	4352	4000	17648
36 473	1835 - 1886	1 - 168	7168 - 7539	4352	4000	17648
37 474	1887 - 1938	1 - 168	7376 - 7747	4352	4000	17648
38 475	1939 - 1990	1 - 168	7584 - 7955	4352	4000	17648
39 476	1991 - 2042	1 - 168	7792 - 8163	4352	4000	17648
40 477	2043 - 2094	1 - 168	8000 - 8371	4352	4000	17648
41 478	2095 - 2146	1 - 168	8208 - 8579	4352	4000	17648
42 479	2147 - 2198	1 - 168	8416 - 8787	4352	4000	17648
43 480	2199 - 2250	1 - 168	8624 - 8995	4352	4000	17648
44 481	2251 - 2302	1 - 168	8832 - 9203	4352	4000	17648
45 482	2303 - 2355	1 - 168	9040 - 9415	4352	4000	17648
46 483	2356 - 2407	1 - 168	9252 - 9623	4352	4000	17648
47 484	2408 - 2460	1 - 168	9460 - 9835	4352	4000	17648
48 485	2461 - 2513	1 - 168	9672 - 10047	4352	4000	17648
49 486	2514 - 2566	1 - 168	9884 - 10259	4352	4000	17648
50 487	2567 - 2600	1 - 168	10096 - 10395	4352	4000	17648

DIP 1

1 488	1 - 52	1 - 168	-168 - 203	4352	4000	17648
2 489	53 - 105	1 - 168	40 - 415	4352	4000	17648
3 490	106 - 157	1 - 168	252 - 623	4352	4000	17648
4 491	158 - 209	1 - 168	460 - 831	4352	4000	17648
5 492	210 - 261	1 - 168	668 - 1039	4352	4000	17648
6 493	262 - 313	1 - 168	876 - 1247	4352	4000	17648
7 494	314 - 365	1 - 168	1084 - 1455	4352	4000	17648
8 495	366 - 418	1 - 168	1292 - 1667	4352	4000	17648
9 496	419 - 470	1 - 168	1504 - 1875	4352	4000	17648
10 497	471 - 522	1 - 168	1712 - 2083	4352	4000	17648
11 498	523 - 574	1 - 168	1920 - 2291	4352	4000	17648
12 499	575 - 626	1 - 168	2128 - 2499	4352	4000	17648
13 500	627 - 678	1 - 168	2336 - 2707	4352	4000	17648
14 501	679 - 730	1 - 168	2544 - 2915	4352	4000	17648
15 502	731 - 782	1 - 168	2752 - 3123	4352	4000	17648
16 503	783 - 834	1 - 168	2960 - 3331	4352	4000	17648
17 504	835 - 886	1 - 168	3168 - 3539	4352	4000	17648

505	887 - 938	1 - 168	3376 - 3747	4352	4000	17648
506	939 - 990	1 - 168	3584 - 3955	4352	4000	17648
507	991 - 1042	1 - 168	3792 - 4163	4352	4000	17648
508	1043 - 1094	1 - 168	4000 - 4371	4352	4000	17648
509	1095 - 1146	1 - 168	4208 - 4579	4352	4000	17648
510	1147 - 1198	1 - 168	4416 - 4787	4352	4000	17648
511	1199 - 1251	1 - 168	4624 - 4999	4352	4000	17648
512	1252 - 1303	1 - 168	4836 - 5207	4352	4000	17648
513	1304 - 1355	1 - 168	5044 - 5415	4352	4000	17648
514	1360 - 1410	1 - 168	5268 - 5635	4352	4000	17648
515	1411 - 1462	1 - 82	5472 - 5757	4352	4000	17648
516	1463 - 1514	1 - 168	5680 - 6051	4352	4000	17648
517	1515 - 1567	1 - 168	5888 - 6263	4352	4000	17648
518	1568 - 1619	1 - 168	6100 - 6471	4352	4000	17648
519	1620 - 1671	1 - 168	6308 - 6679	4352	4000	17648
520	1672 - 1723	1 - 168	6516 - 6887	4352	4000	17648
521	1724 - 1775	1 - 168	6724 - 7095	4352	4000	17648
522	1776 - 1827	1 - 168	6932 - 7303	4352	4000	17648
523	1828 - 1880	1 - 168	7140 - 7515	4352	4000	17648
524	1881 - 1932	1 - 168	7352 - 7723	4352	4000	17648
525	1933 - 1984	1 - 168	7560 - 7931	4352	4000	17648
526	1985 - 2036	1 - 168	7768 - 8139	4352	4000	17648
527	2037 - 2088	1 - 168	7976 - 8347	4352	4000	17648
528	2095 - 2145	1 - 168	8208 - 8575	4352	4000	17648
529	2146 - 2197	1 - 168	8412 - 8783	4352	4000	17648
530	2198 - 2249	1 - 168	8620 - 8991	4352	4000	17648
531	2250 - 2301	1 - 168	8828 - 9199	4352	4000	17648
532	2302 - 2353	1 - 168	9036 - 9407	4352	4000	17648
533	2354 - 2405	1 - 168	9244 - 9615	4352	4000	17648
534	2406 - 2458	1 - 168	9452 - 9827	4352	4000	17648
535	2459 - 2510	1 - 168	9664 - 10035	4352	4000	17648
536	2511 - 2562	1 - 168	9872 - 10243	4352	4000	17648
537	2563 - 2614	1 - 168	10080 - 10451	4352	4000	17648
538	2615 - 2666	1 - 168	10288 - 10659	4352	4000	17648
539	2667 - 2718	1 - 168	10496 - 10867	4352	4000	17648
540	2719 - 2770	1 - 55	10704 - 10962	4352	4000	17648
541	2771 - 2822	1 - 168	10912 - 11283	4352	4000	17648
542	2823 - 2859	1 - 168	11120 - 11431	4352	4000	17648

Appendix 2

Barbados Backstop Experiment OBS Deployment, Recovery and Data Summary

Station	Chassis S/N	Sphere S/N	Disk Drive S/N	Deployment			Recovery			Acquired Data			
				Time	Location	Depth m	Time	Location	Depth m	Channels	Period	Hrs.	Mb
11	94-1	40365	Toshiba 64D10690	3/16 11:11	16°06.882'N 60°25.566'W	4632	3/22 23:31	16°06.924'N 60°25.512'W	4631	1,2,3	3/17 09:00 - 3/22 14:10	125.2	313.5
12	93-4	55496	Toshiba 94U11824	3/16 10:22	16°06.885'N 60°19.964'W	4518	3/22 22:04	16°06.726'N 60°19.961'W	4523	1,2,3,4	3/17 09:00 - 3/22 14:05	125.1	413.5
13	93-12	55477	Toshiba 94U11794	3/16 09:21	16°06.907'N 60°14.354'W	4593	3/23 08:27	16°06.471'N 60°14.400'W	4530	1,2,3	3/17 09:00 - 3/22 14:07	125.1	313.5
14	94-1	40365	Toshiba 94U11813	3/23 12:03	16°06.879'N 60°08.820'W	4562	3/31 22:20	16°06.828'N 60°08.687'W	4559	1,2,3	3/24 17:00 - 3/30 23:07	150.1	376
15	93-12	44568	IBM 7L4Q0267	3/23 13:02	16°06.856'N 60°03.172'W	4614	3/31 20:09	16°06.613'N 60°02.782'W	4624	1,2,3	3/24 17:00 - 3/30 23:00	150.0	376
16	94-2	40372*	Toshiba 94U11823	3/23 13:48	16°06.852'N 59°57.581'W	4686	3/31 11:33	16°06.559'N 59°57.177'W	4686	1,2,3	3/24 17:00 - 3/30 23:04	150.1	376
17	94-3	59126°	Toshiba 94J30827	3/23 14:32	16°06.867'N 59°51.948'W	4769	3/31 10:12	16°06.783'N 59°51.685'W	4778	1,2,3	3/24 17:00 - 3/30 23:03	150.1	375.5
18	93-10	59368°	Toshiba 94U11820	3/16 00:34	16°06.838'N 59°46.320'W	4829	3/23 15:58	16°06.739'N 59°46.377'W	4838	1,2,3	3/17 09:00 - 3/22 14:09	125.2	313.5
21	92-7	57113	Toshiba 94U11811	3/16 11:52	16°12.012'N 60°27.316'W	4791	3/23 00:54	16°12.075'N 60°27.141'W	4789	1,2,3,4	3/17 09:00 - 3/22 14:08	125.1	413
22	94-14	59105°	Toshiba 94J30878	3/16 12:30	16°12.030'N 60°21.750'W	4603	3/23 05:53	16°11.843'N 60°21.589'W	4599	1,2,3,4	3/17 09:00 - 3/22 14:05	125.1	414.5
23	94-7	57112	Toshiba 94U11791	3/16 08:29	16°12.001'N 60°16.091'W	4623	3/23 07:14	16°11.581'N 60°15.954'W	4632	1,2,3,4	3/17 09:00 - 3/22 14:02	125.0	413.5
24	94-11	52239	IBM 7L4C0505	3/16 07:34	16°12.009'N 60°10.509'W	4861	3/31 23:02	16°11.989'N 60°10.315'W	4862	1,2,3,4	3/17 09:00 - 3/22 14:08	125.1	414
											3/24/17:00 - 3/30 23:05	150.1	496.5
25	94-8	59371°	IBM 7L1W1755	3/16 06:36	16°12.009'N 60°04.912'W	4792	3/31 18:54	16°11.661'N 60°04.488'W	4786	1,2,3,4	3/17 09:00 - 3/22 14:01	125.0	415
											3/24/17:00 - 3/30 23:03	150.1	498

Station	Chassis S/N	Sphere S/N	Disk S/N	Deployment			Recovery			Acquired Data			
				Time	Location	Depth m	Time	Location	Depth m	Channels	Period	Hrs.	Mb
26	94-13	56962	IBM 7L4Q0272	3/16 05:41	16°12.009'N 59°59.301'W	4917	3/31 12:45	16°11.763'N 59°58.852'W	4915	1,2,3,4	3/17 09:00 - 3/22 14:01	125.0	413.5
											3/24/17:00 - 3/30 23:06	150.1	496.5
27	94-12	50676	IBM 7L4G2320	3/16 04:38	16°11.964'N 59°53.700'W	4810	3/31 09:07	16°11.804'N 59°53.528'W	4837	1,2,3,4	3/17 09:00 - 3/22 14:02	125.0	413.5
											3/24/17:00 - 3/30 23:08	150.1	496.5
28	92-2	55472	Toshiba 94U11816	3/16 01:28	16°11.979'N 59°48.036'W	5052	3/23 17:30	16°11.834'N 59°47.983'W	5053	1,2,3,4	3/17 09:00 - 3/22 14:06	125.1	414.5
31	94-4	44568	Toshiba 94U11812	3/16 14:41	16°17.138'N 60°29.032'W	4842	3/23 02:05	16°17.182'N 60°28.795'W	4839	1,2,3	3/17 09:00 - 3/22 14:08	125.1	313.5
32	94-2	40372*	Toshiba 94U11841	3/16 14:00	16°17.161'N 60°23.408'W	4795	3/23 03:14	16°17.145'N 60°23.009'W	4847	1,2,3	3/17 09:00 - 3/22 14:07	125.1	313.5
33	94-3	59126°	Toshiba 94U11792	3/16 13:14	16°17.161'N 60°17.893'W	5026	3/23 08:27	16°16.683'N 60°17.424'W	4843	1,2,3	3/17 09:00 - 3/22 14:04	125.1	313
34	93-11	40369*	IBM 7L4M3079	3/24 04:09	16°17.150'N 60°12.277'W	5224	4/01 00:13	16°16.930'N 60°11.755'W	5159	1,2,3	3/24 17:00 - 3/30 23:09	150.1	376
35	93-10	59368°	IBM 7L4Q0297	3/24 03:17	16°17.131'N 60°06.639'W	4894	3/31 17:41	16°16.657'N 60°05.997'W	4886	1,2,3	3/24 17:00 - 3/30 23:04	150.1	376
36	94-4	55477	Toshiba 94U11795	3/24 02:29	16°17.144'N 60°01.056'W	4932	3/31 14:11	16°16.925'N 60°00.285'W	4930	1,2,3	3/24 17:00 - 3/30 23:06	150.1	376
37	93-4	55496	IBM 7L4Q0301	3/24 01:36	16°17.134'N 59°55.441'W	4811	3/31 07:48	16°17.188'N 59°55.080'W	4836	1,2,3,4	3/24 17:00 - 3/30 23:01	150.0	496.5
38	93-11	40369*	Toshiba 94U11828	3/16 02:23	16°17.114'N 59°49.762'W	5029	3/23 18:43	16°17.008'N 59°49.642'W	5029	1,2,3	3/17 09:00 - 3/22 14:00	125.0	313

Station	Chassis S/N	Sphere S/N	Disk S/N	Deployment			Recovery			Acquired Data			
				Time	Location	Depth m	Time	Location	Depth m	Channels	Period	Hrs.	Mb
41	94-18	58732°	IBM 7L1Q4981	3/16 15:22	16°22.266'N 60°30.879'W	4865	4/01 05:08	16°21.970'N 60°30.588'W	4892	1,2,3	3/17 09:00 - 3/22 14:04	125.1	318.5
											3/24/17:00 - 3/30 23:01	150.0	376
42	94-16	55478	IBM 7L4P9984	3/16 15:58	16°22.284'N 60°25.219'W	5169	4/01 03:50	16°21.960'N 60°24.775'W	5169	1,2,3,4	3/17 09:00 - 3/22 14:00	125.0	415
											3/24/17:00 - 3/30 23:00	150.0	498
43	94-15	55454	IBM 7L4M4672	3/16 16:33	16°22.259'N 60°19.576'W	4989	4/01 02:40	16°21.913'N 60°19.070'W	4941	1,2,3,4	3/17 09:00 - 3/22 14:05	125.1	414
											3/24/17:00 - 3/30 23:01	150.0	496.5
44	92-7	57113	IBM 7L4N8265	3/24 04:57	16°22.267'N 60°14.017'W	5088	4/01 01:30	16°21.940'N 60°13.647'W	5139	1,2,3,4	3/24 17:00 - 3/30 23:05	150.1	495.5
45	94-14	59105°	IBM 7L4P9979	3/24 05:42	16°22.251'N 60°08.392'W	5058	3/31 16:24	16°21.820'N 60°07.759'W	5007	1,2,3,4	3/24 17:00 - 3/30 23:06	150.1	497.5
46	94-7	57112	IBM 7L4M4374	3/24 06:29	16°22.256'N 60°02.730'W	5102	3/31 15:20	16°21.896'N 60°02.154'W	5026	1,2,3,4	3/24 17:00 - 3/30 23:05	150.1	496.5
47	92-2	55472	IBM 7L4Q0357	3/24 07:19	16°22.252'N 59°57.173'W	5111	3/31 06:46	16°22.253'N 59°57.003'W	5097	1,2,3,4	3/24 17:00 - 3/30 23:03	150.0	498
48	92-5	55427	IBM 7L4G2383	3/16 03:19	16°22.251'N 59°51.555'W	5061	3/31 05:15	16°22.192'N 59°51.600'W	5061	1,2,3,4	3/17 09:00 - 3/22 14:04	125.1	413
											3/24/17:00 - 3/29 09:06	136.1	424
											Total	5489	16,376.5

All times are in local (UTC - 4 hrs.). Water depth uncorrected for sound speed.

*Geophone axes of spheres 40369 and 40372, deployed at stations 16, 32, 34 and 38, are of left-hand system, i.e., horizontal axes are reversed.

°Spheres 58732, 59105, 59126, 59368 and 59371, deployed at stations 17, 18, 22, 25, 33, 35, 41 and 45 have Oyo GS-11D geophones, while all others have Mark Products L-15B geophones.