

Company: L-DEO - Lamont - Doherty Earth Observatory
Vessel: Marcus G. Langseth
Client: UTIG/WHOI/USGS

Project: MGL2316
Area: Puerto Rico
Scope: Seq001 - XXX
Start Date: 19-Nov-23

Vessel Sensor Offsets

Towing Offsets

Towing Configuration

Gun Array Offsets

Streamer Front End

Streamer Tail End

Streamer Complete

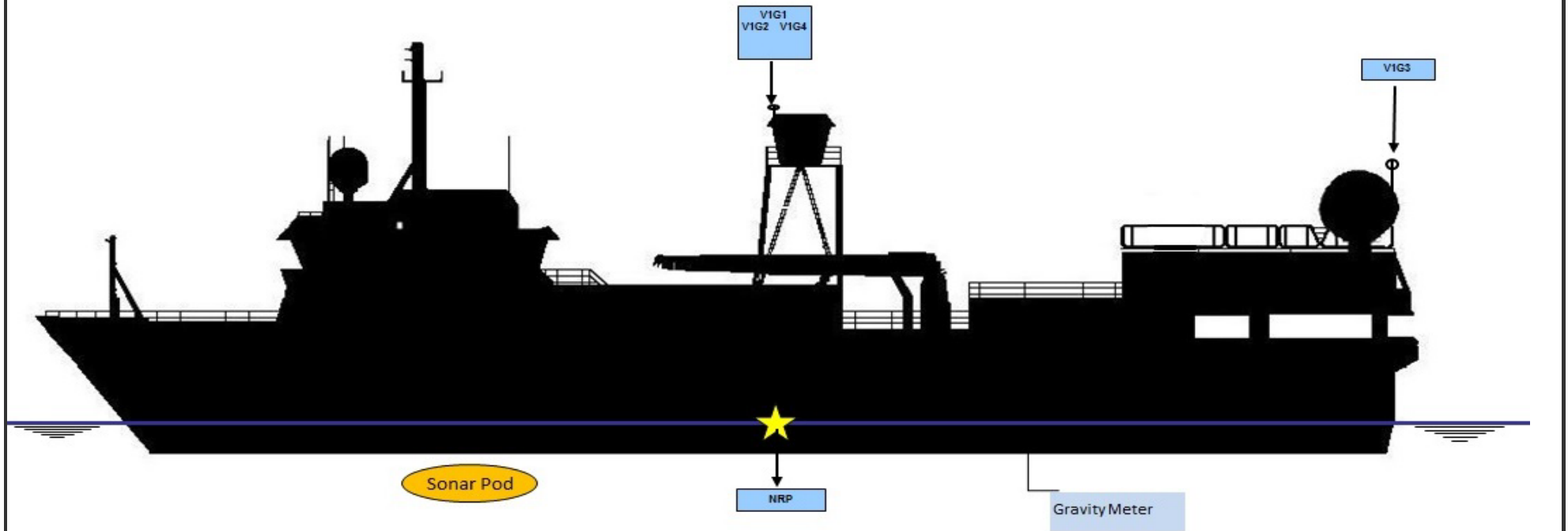
Hydrophone Offsets

Tailbuoy Offsets

Timing



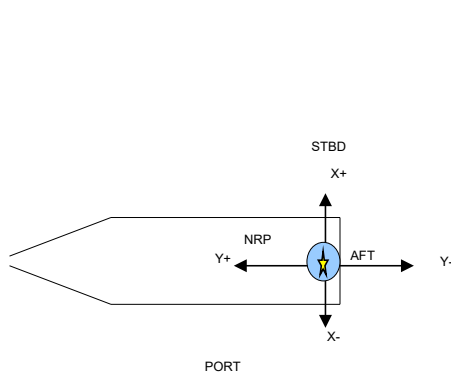
R/V Marcus G. Langseth - Vessel Sensor Offsets



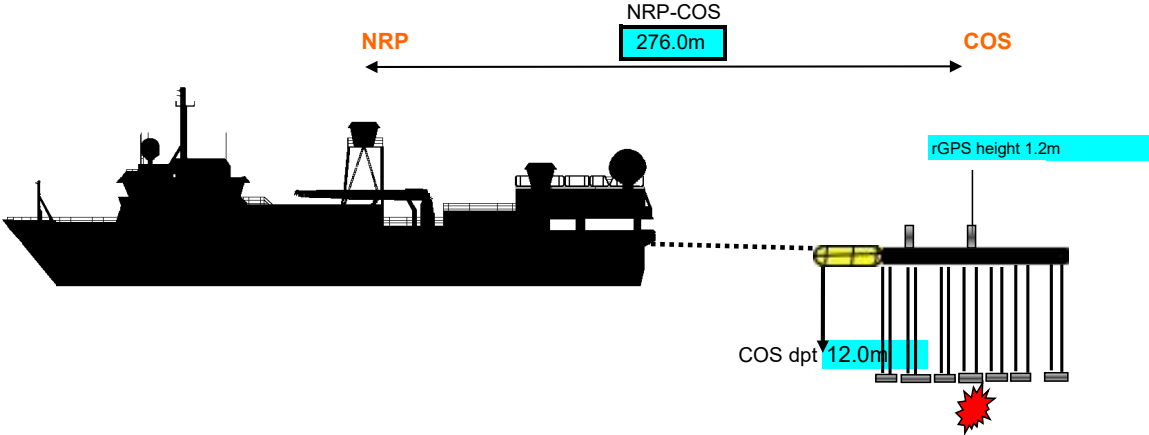
Negative values are above water line

All measurements in meters

			STBD/PORT (X)	FORE/AFT (Y)	UP/DOWN (Z)	
NRP	NAVIGATION REFERENCE POINT		0.00	0.00	0.00	
V1G1	SeaPath 330	Orca	-1.24	-1.25	-16.78	
V1G2	C-Nav3050 MMO Tower	Orca	0.00	0.00	-16.90	
V1G3	C-Nav3050 Stern	Orca	-1.95	-31.83	-14.50	
V1G4	Pos MV	Orca	2.39	12.75	-16.90	
	PosMV Output position is IMU mounted in stbd drylab					
V1R1	PosNet		-1.92	-0.02	-16.90	
Sonar Pod	EM122 Knudsen ADCP		0.00	20.20	7.49	
	EM122 Center Beam offset (in Spectra)		0.00	13.4	7.49	
MRU	Seapath MRU		2.39	12.75	-4.30	
BGM	Bell Gravity Meter		0.00	-13.10	1.10	



R/V Marcus G. Langseth - Towing Offsets



NRP	Nav Reference Point
COS	Centre of Source
CNG	Centre of Near Group
CMP	Common Mid-Point
MSL	Mean Sea Level
NRP-Stern	29.2m
NRP-COS	276.0m

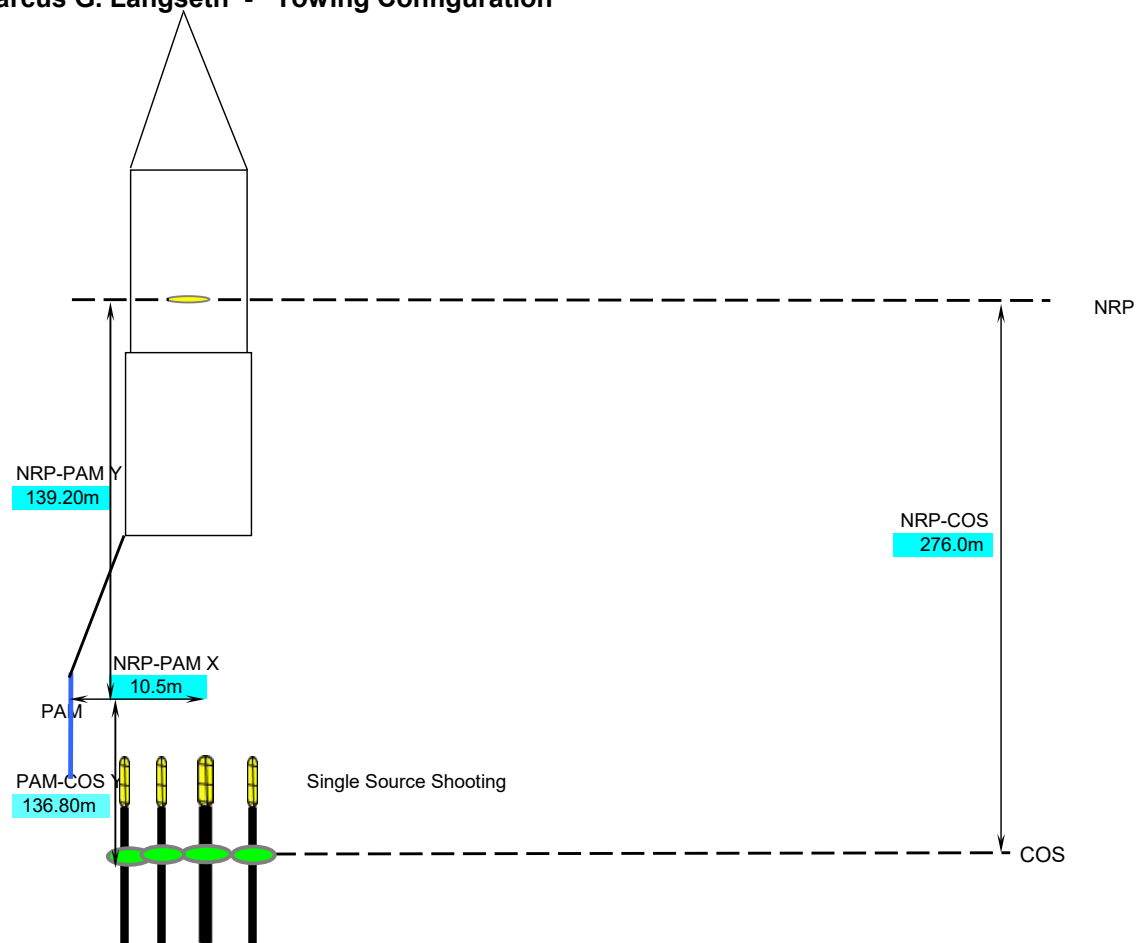
Trace # 1 Of S1

All measurements in meters

Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Towing Configuration

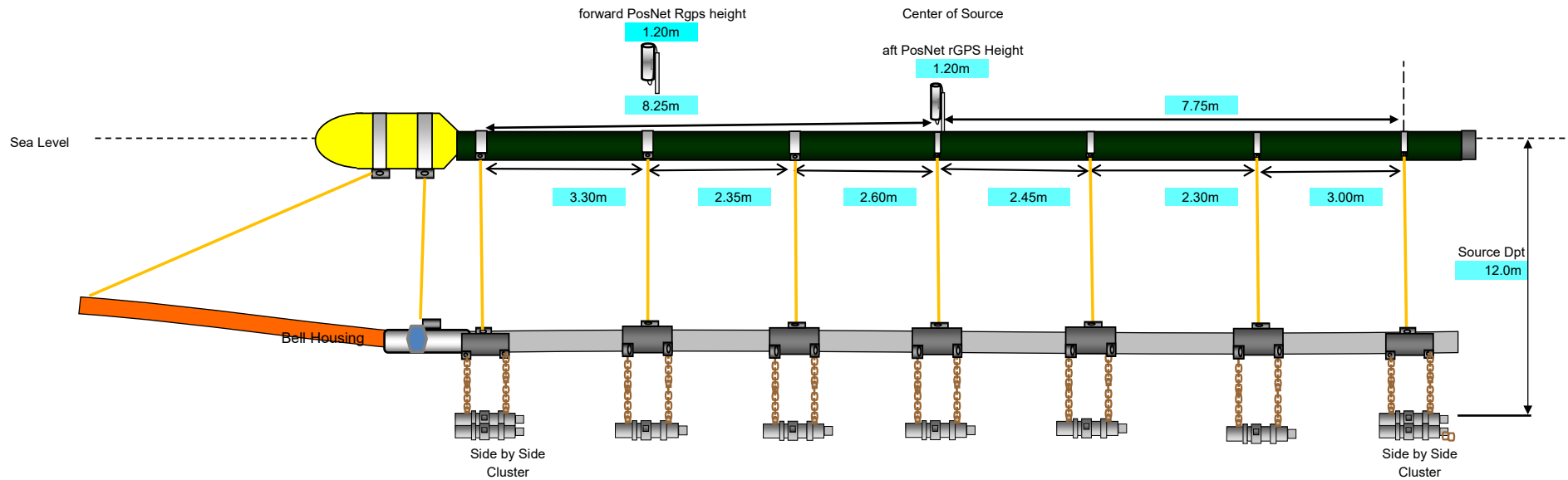
	# Streamers	Length	Channels	Spacing
SEAL				
# Gun Strings Used	4		Vol (in^3)	6600



NOT to Scale

Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Gun Array Offsets



Gun volumes by number		
Gun	Volume	Status
Gun 1	360 cu. in.	Primary
Gun 2	360 cu. in.	Primary
Gun 3	40 cu. in.	Primary & Mitigation
Gun 4	180 cu. in.	Primary
Gun 5	90 cu. in.	Primary
Gun 6	120 cu. in.	Primary
Gun 7	60 cu. in.	Primary
Gun 8	220 cu. in.	Primary
Gun 9	220 cu. in.	Primary

Primary & Mitigation

Array total volume (without spares) is 6600 cu. in. Total volume/string (without spare) 1650 cu. in.

Guns (1 & 2) & (8 & 9) in a horizontal cluster.

Gun clusters have 0.75m between guns and hang 0.95m from center of hanger

Horizontal Clusters are 1m from gun port to gun port

Single guns hang from hanger 1.15m

All gun volumes, numbering, locations, and offsets were inspected and verified by Chief Source Mechanic.

All measurements in meters
NOTE: drawing not to scale

Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Gun Configuration



Center of Source

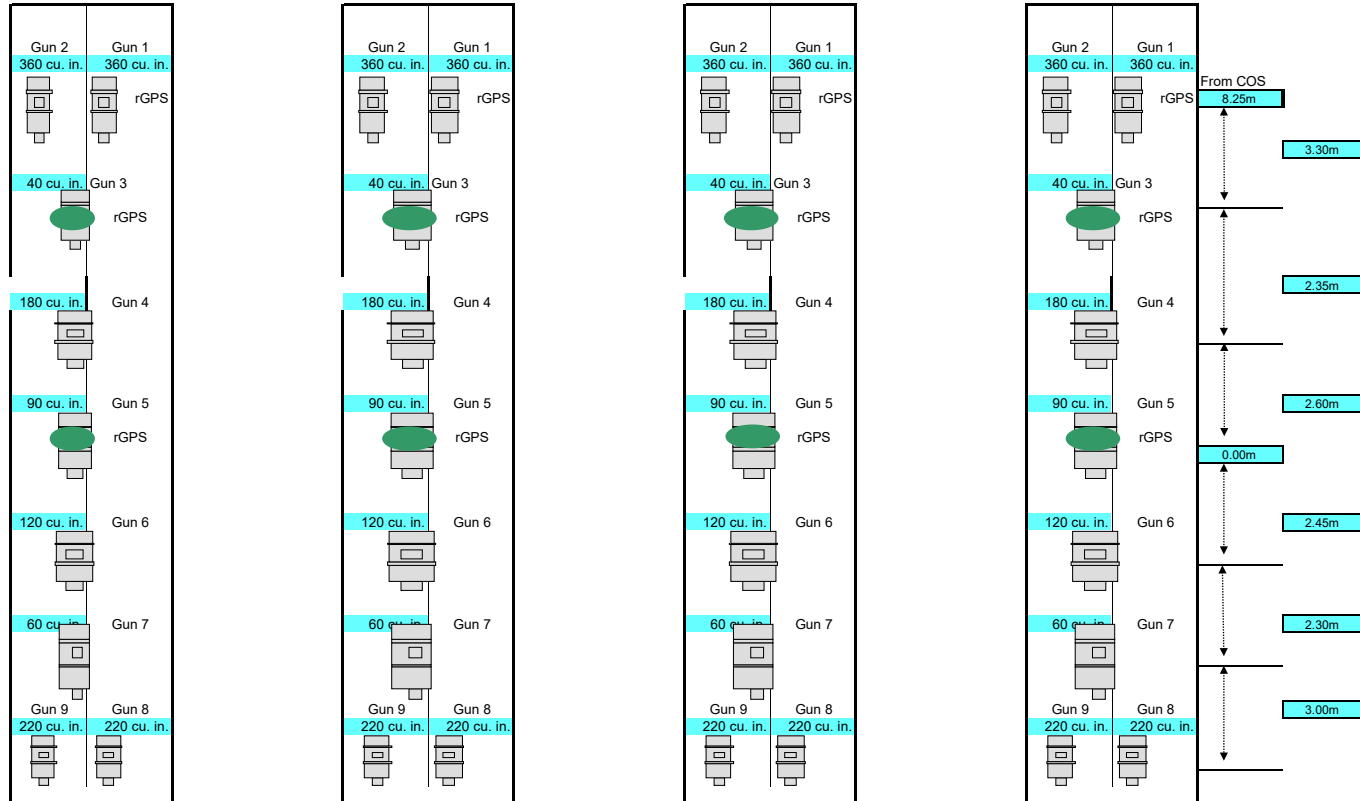
Sub array #4 6.0m Sub array #3 6.0m Sub array #2 6.0m Sub array #1

Gun Clusters
Guns 1 & 2 horizontal array
Guns 8 & 9 horizontal array

Gun Offsets relative to Center of String

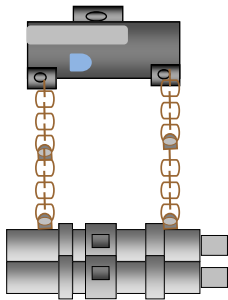
	X	Y
Gun 1	0.50m	8.23m
Gun 2	-0.50m	8.23m
Gun 3	0.00m	5.00m
Gun 4	0.00m	-2.60m
Gun 5	0.00m	-2.46m
Gun 6	0.00m	-4.77m
Gun 7	0.50m	-7.77m
Gun 8	-0.50m	-7.77m
Gun 9	0.50m	8.23m

All measurements in meters

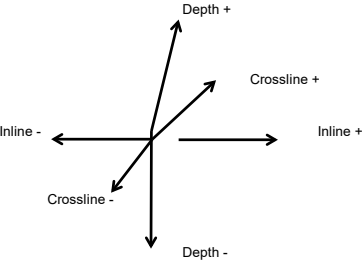


Distances in Meters

Gun Plate



Center of ports between guns 1 and 2 is the reference point



Hydrophone Offsets

Gun String 1				
Plate	Phone	Inline	Crossline	Depth
1	1			
2	2	3.35	0.00	1.00
3	3	5.50	0.00	1.00
4	4			
5	5	10.68	0.00	1.00
6	6			
7	7			

Gun String 2				
Plate	Phone	Inline	Crossline	Depth
1	1			
2	2	3.35	0.00	1.00
3	3	5.50	0.00	1.00
4	4			
5	5	10.68	0.00	1.00
6	6			
7	7			

Gun String 3				
Plate	Phone	Inline	Crossline	Depth
1	1			
2	2	3.35	0.00	1.00
3	3	5.50	0.00	1.00
4	4			
5	5	10.68	0.00	1.00
6	6			
7	7			

Gun String 4				
Plate	Phone	Inline	Crossline	Depth
1	1			
2	2	3.35	0.00	1.00
3	3	5.50	0.00	1.00
4	4			
5	5	10.68	0.00	1.00
6	6			
7	7			

Depth Transducer Offsets

Gun String 1				
Plate	DT	Inline	Crossline	Depth
1	1	0.00	0.00	1.20
2				
3	2	5.75	0.00	1.08
4				
5				
6				
7	3	16.30	0.00	1.23

Gun String 2				
Plate	DT	Inline	Crossline	Depth
1	1	0.00	0.00	1.20
2				
3	2	5.75	0.00	1.08
4				
5				
6				
7	3	16.30	0.00	1.23

Gun String 3				
Plate	DT	Inline	Crossline	Depth
1	1	0.00	0.00	1.20
2				
3	2	5.75	0.00	1.08
4				
5				
6				
7	3	16.30	0.00	1.23

Gun String 4				
Plate	DT	Inline	Crossline	Depth
1	1	0.00	0.00	1.20
2				
3	2	5.75	0.00	1.08
4				
5				
6				
7	3	16.30	0.00	1.23

[illegible]