

Company: L-DEO - Lamont - Doherty Earth Observatory  
Vessel: Marcus G. Langseth  
Client: Abers/Becel / NSF

Project: MGL1903

Area: AACSE / Kodiak Alaska  
Start Date: 4-Jun-19

Vessel Sensor Offsets

Towing Offsets

Towing Configuration

Acoustic Overhead

Gun Array Offsets

Streamer Front End

Streamer Tail End

Streamer Complete

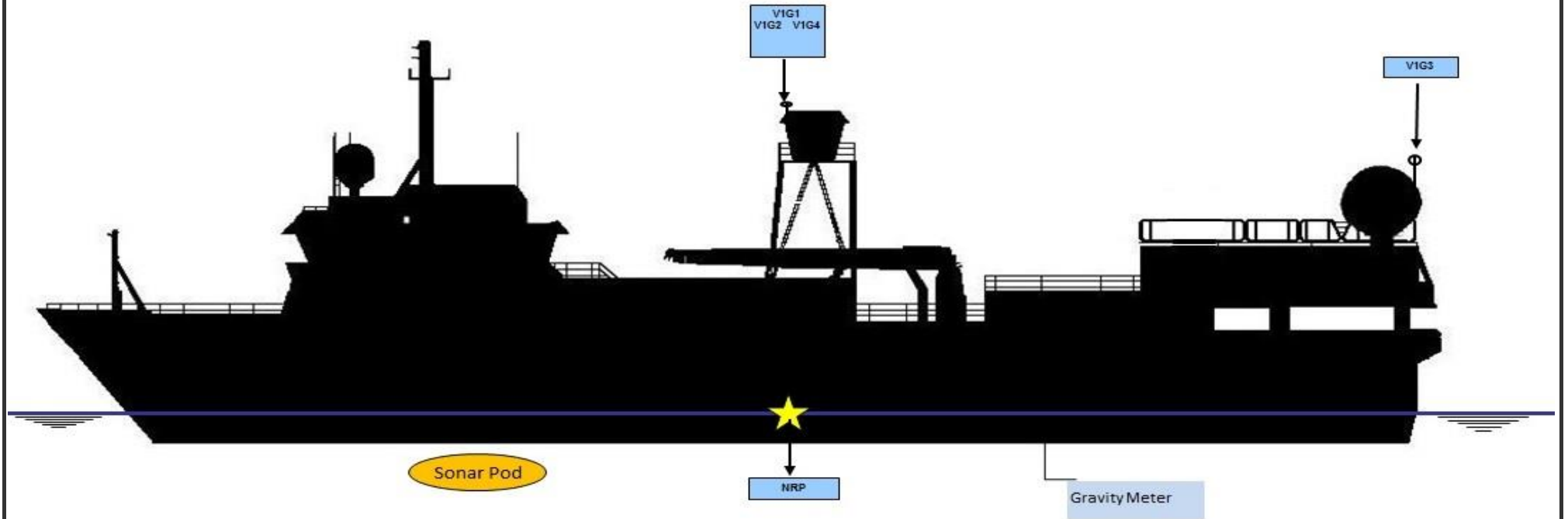
Hydrophone Offsets

Tailbuoy Offsets

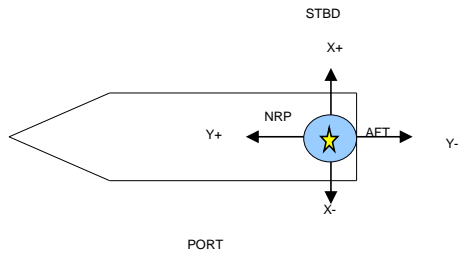
Timing



## R/V Marcus G. Langseth - Vessel Sensor Offsets

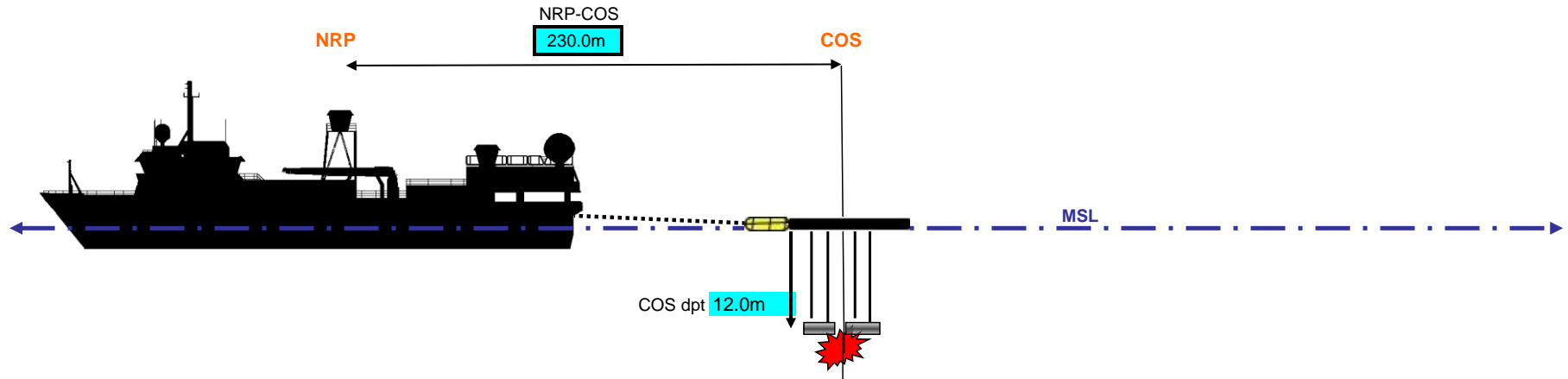


Negative values are above water line  
All measurements in meters



		STBD/PORT (X)	FORE/AFT (Y)	UP/DOWN (Z)
<b>NRP</b>	NAVIGATION REFERENCE POINT	0.00	0.00	0.00
<b>V1G1</b>	C-Nav 3050	0.00	0.00	-16.90
<b>V1G2</b>	SeaPath 200	0.00	1.50	-16.90
<b>V1G3</b>	C-Nav 2000	-2.10	-29.20	-14.50
<b>V1G4</b>	Pos MV	-1.30	1.20	-16.90
<b>V1R1</b>	PosNet	-1.30	0.00	-16.90
<b>Sonar Pod</b>	EM122 Knudsen ADCP	0.00	20.20	7.49
	EM122 Center Beam offset (in Spectra)	0/00	13.4	7.49
<b>MRU</b>	Seapath MRU	2.30	14.16	-4.30
<b>BGM</b>	Bell Gravity Meter	0.00	-13.10	1.10

## R/V Marcus G. Langseth - Towing Offsets



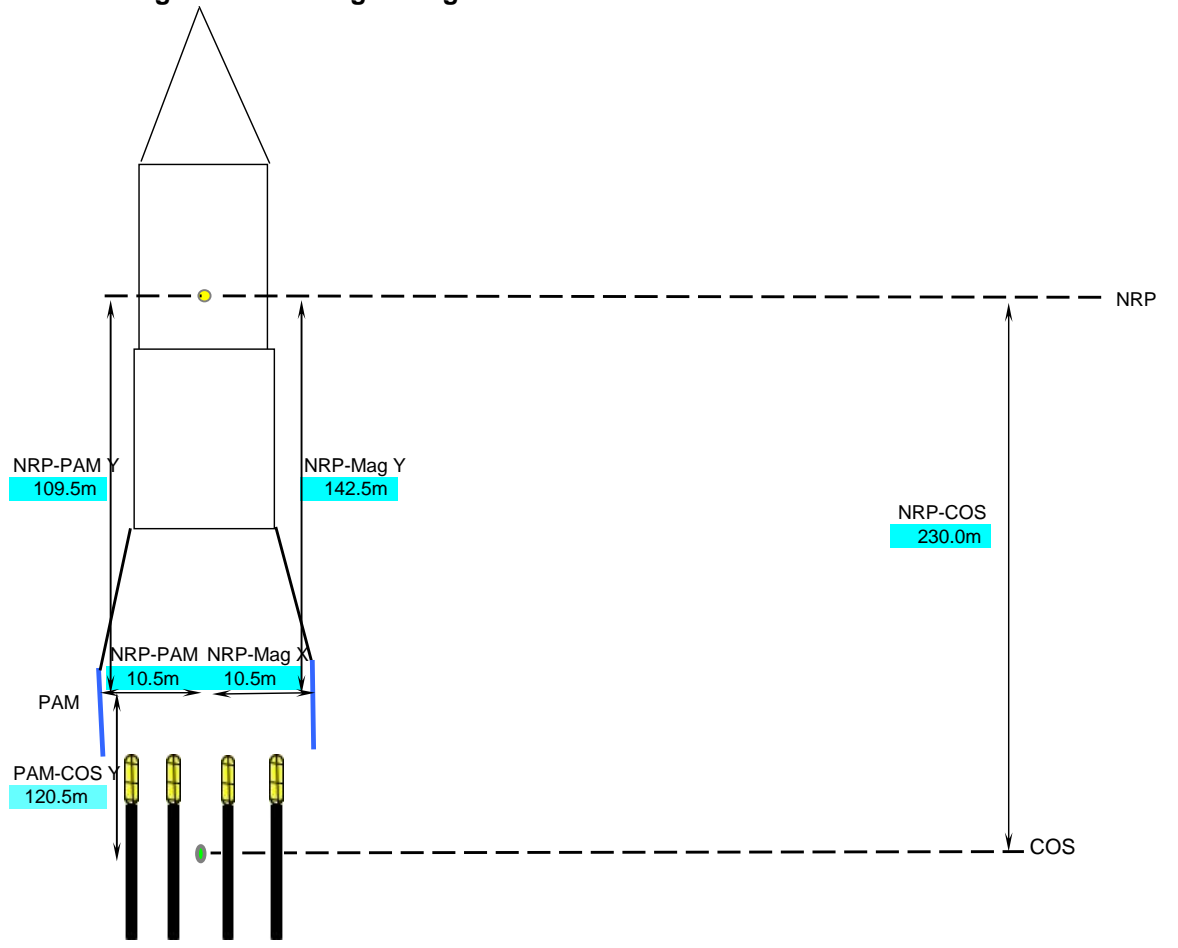
NRP	Nav Reference Point
COS	Centre of Source
CMP	Common Mid-Point
MSL	Mean Sea Level
NRP-Stern	29.5m
NRP-COS	230.0m

All measurements in meters

Cell contents referenced from Config\_offsets tab

# R/V Marcus G. Langseth - Towing Configuration

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



CNG

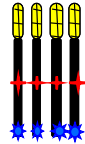
NOT to Scale

Cell contents referenced from Config\_offsets tab

### R/V Marcus G. Langseth - Acoustic Offsets



Source acoustic offsets are referenced to COS on individual gun string

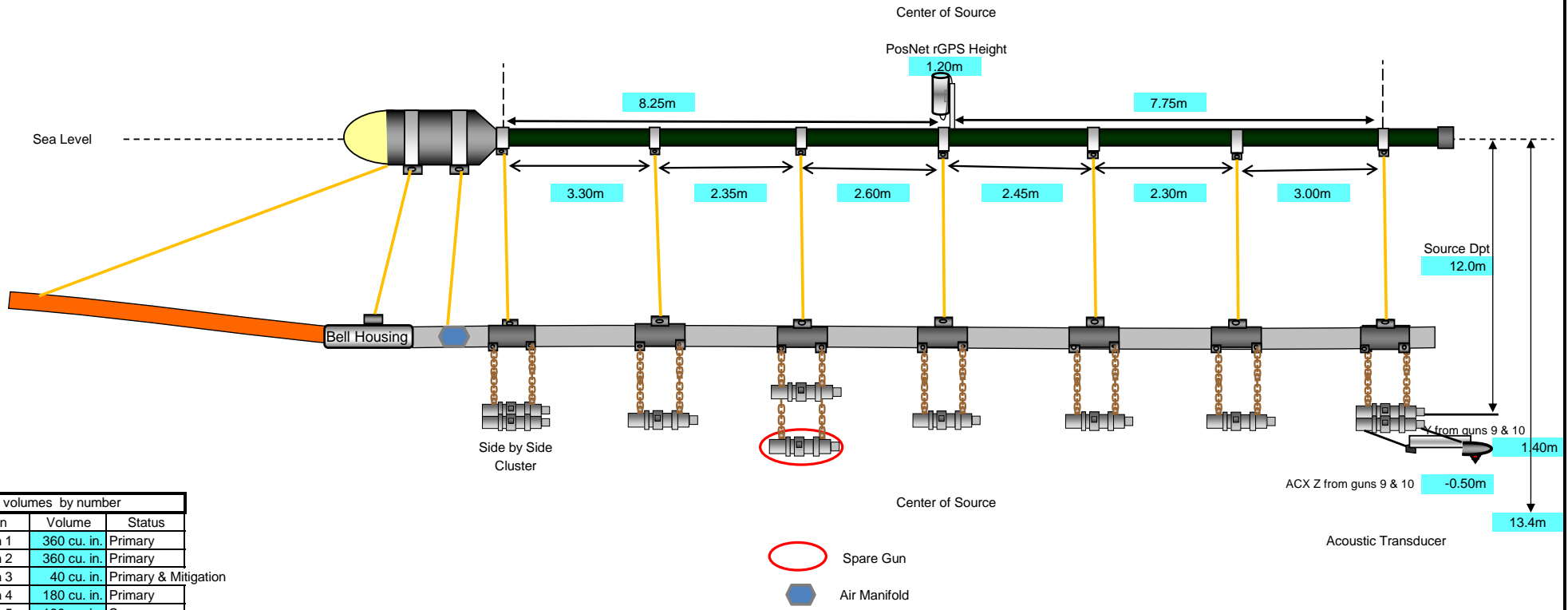


G1T1	-9.2m
G2T1	-9.2m
G3T1	-9.2m
G4T1	-9.2m

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Streamer acoustic offsets are referenced to CNG on individual streamer

## R/V Marcus G. Langseth - Gun Array Offsets



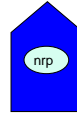
Gun volumes by number		
Gun	Volume	Status
Gun 1	360 cu. in.	Primary
Gun 2	360 cu. in.	Primary
Gun 3	40 cu. in.	Primary & Mitigation
Gun 4	180 cu. in.	Primary
Gun 5	180 cu. in.	Spare
Gun 6	90 cu. in.	Primary
Gun 7	120 cu. in.	Primary
Gun 8	60 cu. in.	Primary
Gun 9	220 cu. in.	Primary
Gun 10	220 cu. in.	Primary

Array total volume (without spares) is **6600 cu. in.** Total volume/string (without spare) **1650 cu. in.**  
 Guns (1 & 2) & (9 & 10) in a horizontal cluster. Guns (5 & 6) in a vertical cluster but #6 is spare only  
 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



ACX = Acoustic

Center of Source



Spare Gun

### Gun Clusters

Guns 1 & 2 horizontal array

Guns 4 & 5 vertical - lower gun is spare only

Guns 9 & 10 horizontal array

### Gun Offsets relative to Center of String

	X	Y
Gun 1	0.50m	8.31m
Gun 2	-0.50m	8.31m
Gun 3	0.00m	5.03m
Gun 4	0.00m	2.60m
Gun 5	0.00m	2.60m
Gun 6	0.00m	0.00m
Gun 7	0.00m	-2.74m
Gun 8	0.00m	-5.09m
Gun 9	0.50m	-8.21m
Gun 10	-0.50m	-8.21m

All measurements in meters

