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Company	Lamont-Doherty Earth Observatory
Vessel	R/V Marcus G. Langseth
Client	NSF
PI	Bangs, Nathan
Project	CRISP 3D
Area	Pacific Ocean, Costa Rica
Start Date	2011-04-10
End Date	2011-05-12

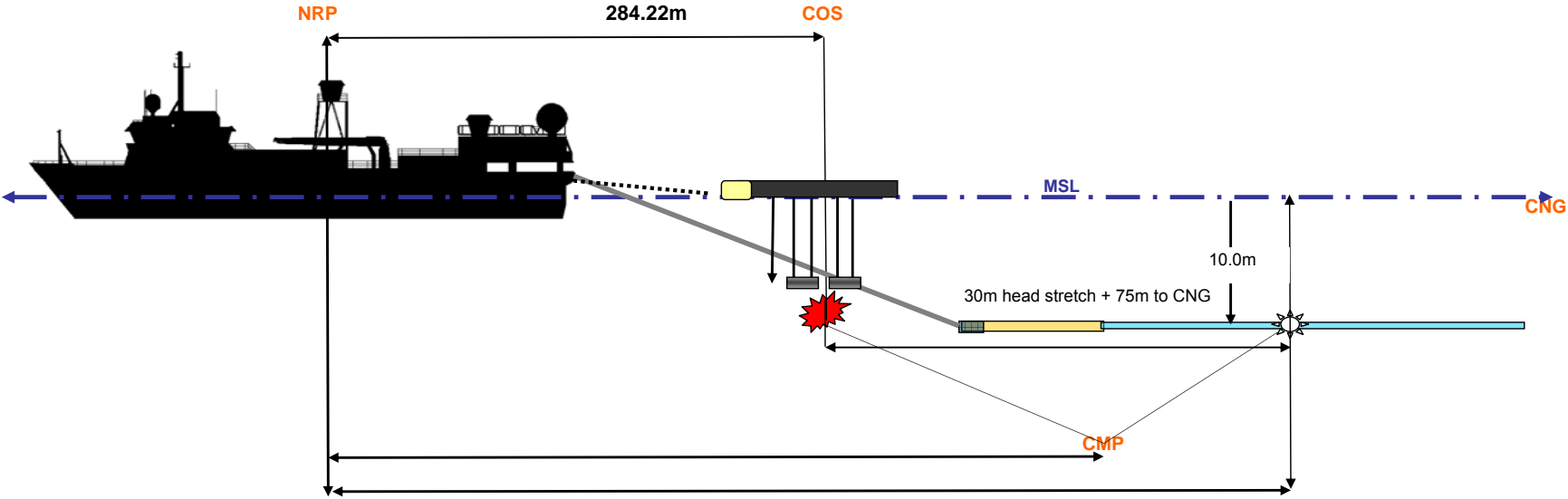
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# R/V Marcus G. Langseth - Towing Offsets

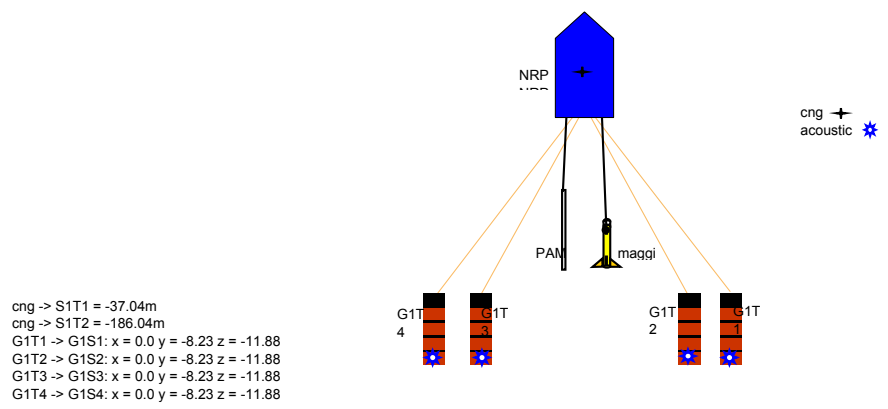
\*\*\* Offsets used for sequences \*\*\*



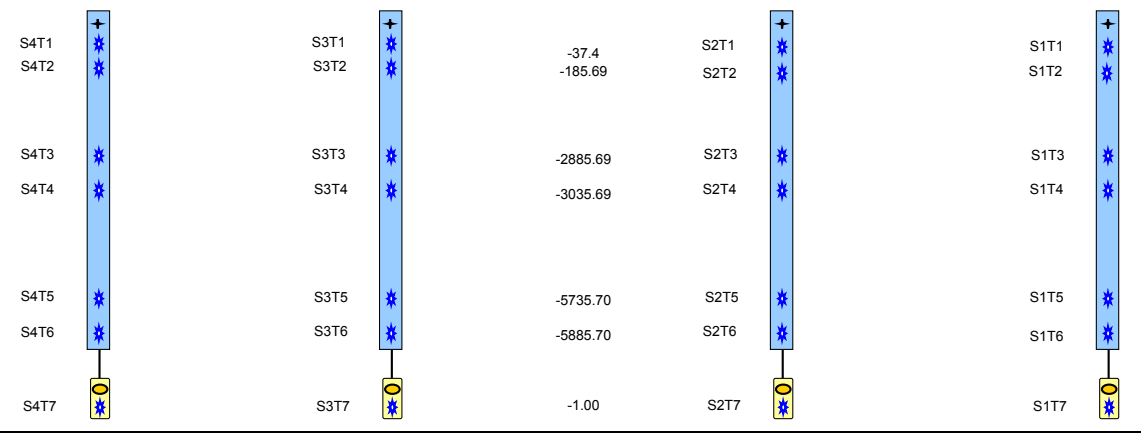
NRP	Nav Reference Point
COS	Centre of Source
CNG	Centre of Near Group (Trace # 001 of: S1; S2; S3; S4)
CMP	Common Mid-Point
MSL	Mean Sea Level
NRP-Stern	29.5m
NRP-COS(G1-G2)	284.22m



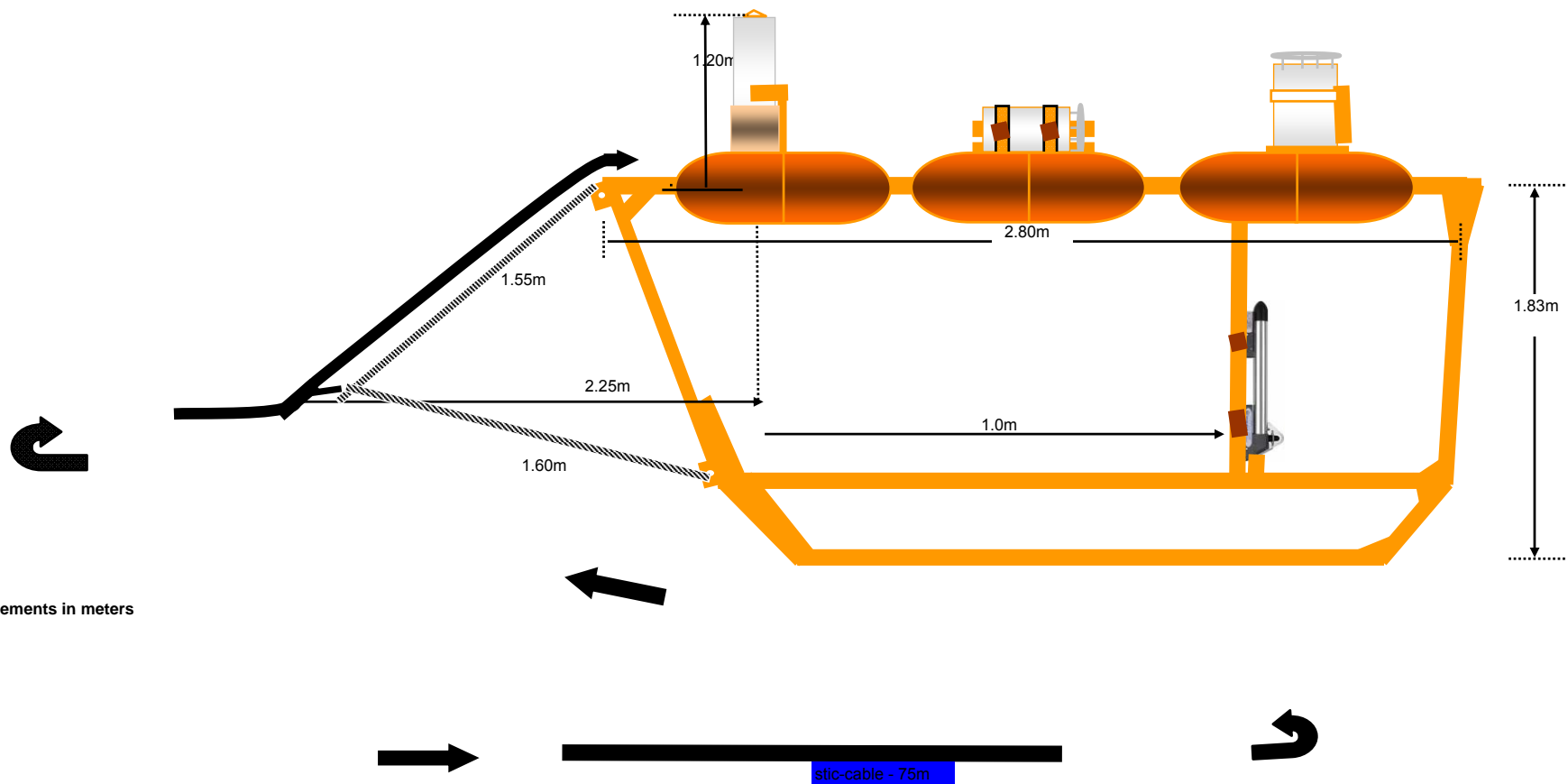
All measurements in meters



Cable acoustic offsets are referenced to cng on individual streamers  
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 Tailbuoy acoustics referenced to dGPS pod

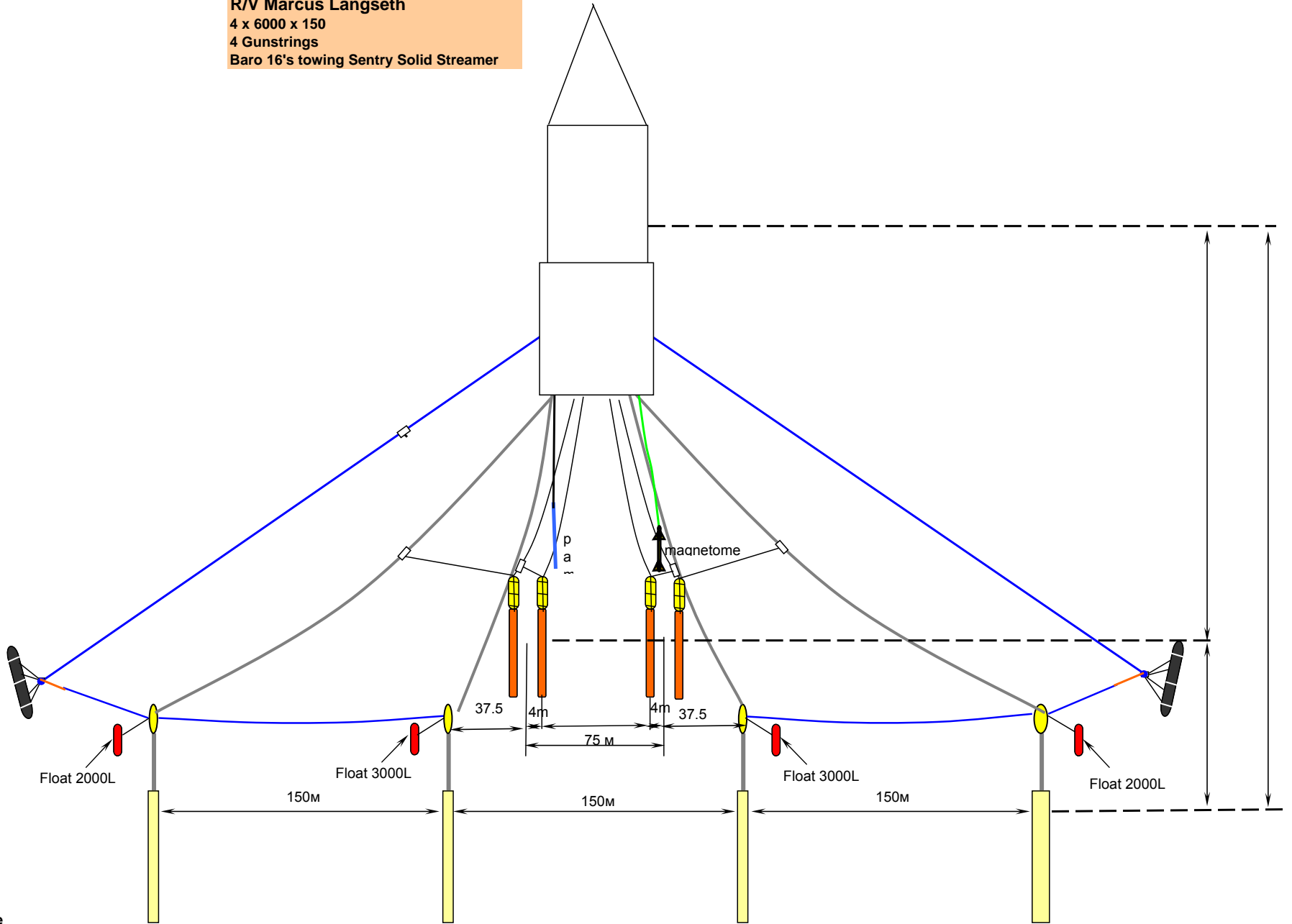


R/V Marcus G. Langseth - Tailbouy



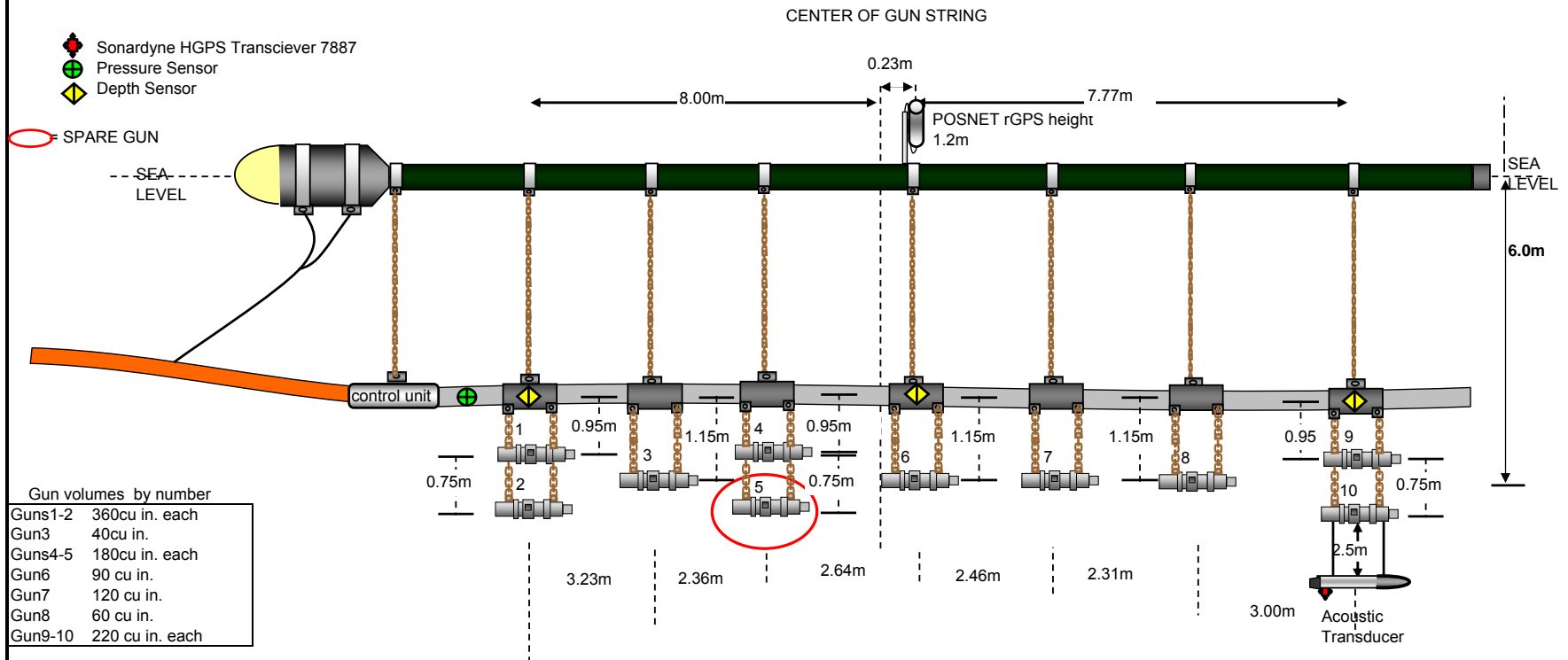
All measurements in meters

R/V Marcus Langseth  
4 x 6000 x 150  
4 Gunstrings  
Baro 16's towing Sentry Solid Streamer



NOT to Scale

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



Array total volume (without spares) is 6600 cubic inches.

String 1 has guns 9 & 10 in a horizontal cluster; Strings 2, 3, 4, have all clusters hanging vertically.

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

Total volume per string (without spare) 1650 cubic inches.

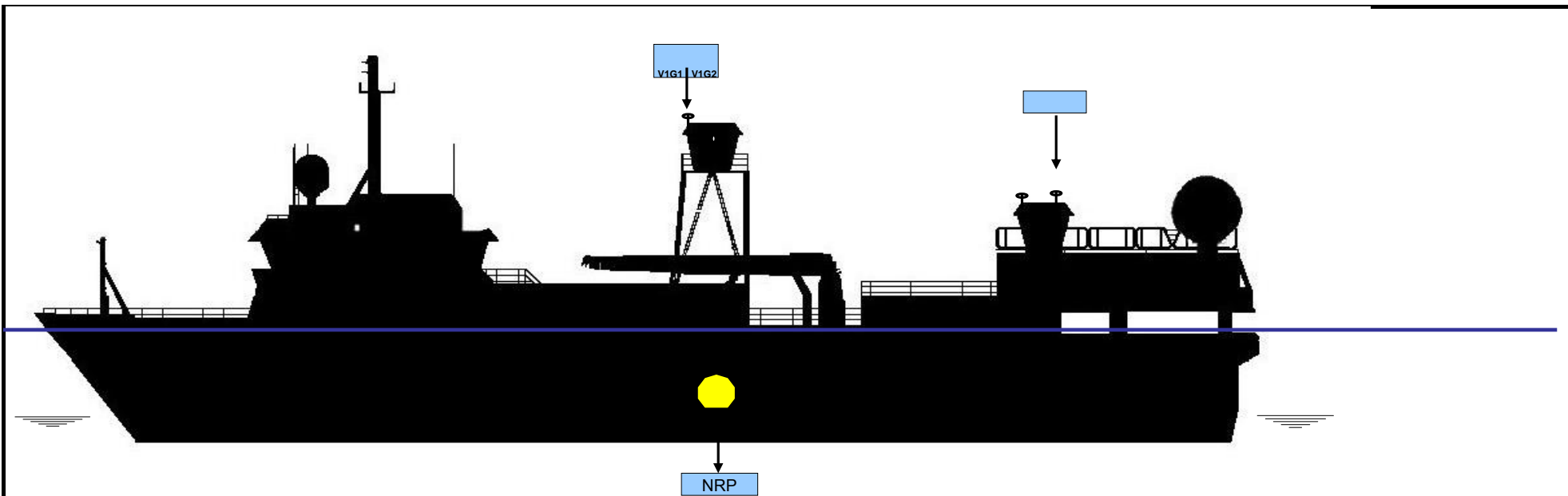
Cluster Guns are 1m apart.

**NOTE: drawing not to scale**

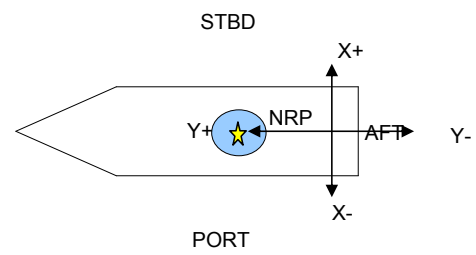
Single guns hang from hanger 1.15m

All measurements in meters

All gun volumes, numbering, locations, and offsets approved by chief gunner Tom Spoto.



All measurements in meters



		FORE/AFT (Y)	STBD/PORT (X)	UP/DOWN (Z)
NRP	NAVIGATION REFERENCE POINT	0.00	0.00	0.00
V1G1	C-Nav 3050	0.00	0.00	16.90
V1G2	SeaPath 200	1.50	0.00	16.90
V1G3	C-Nav 2000	-15.27	4.87	14.50
V1R1	PosNet	0.00	-1.30	16.90

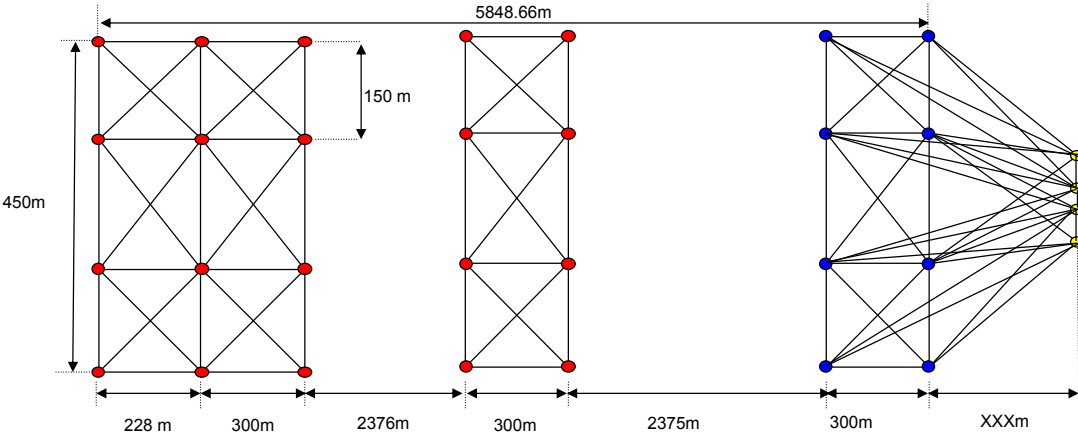
Note: All Echosounders are used in Spectra with 6.6m ship's draft correction applied.



R/V Marcus G. Langseth - Acoustic Offsets

Sonardyne SIPS 1

- HGPS Transciever 7887 & Shock Mounted Transducer 7660
- XSRS 8005 Acoustic Transceiver (Longlife Battery)
- XSRS 7885 Acoustic Transceiver
- XSRS 8018 ASV (Combined Transceiver and Velocimeter)



All measurements in meters



### r/v Marcus G. Langseth - Gun Configuration

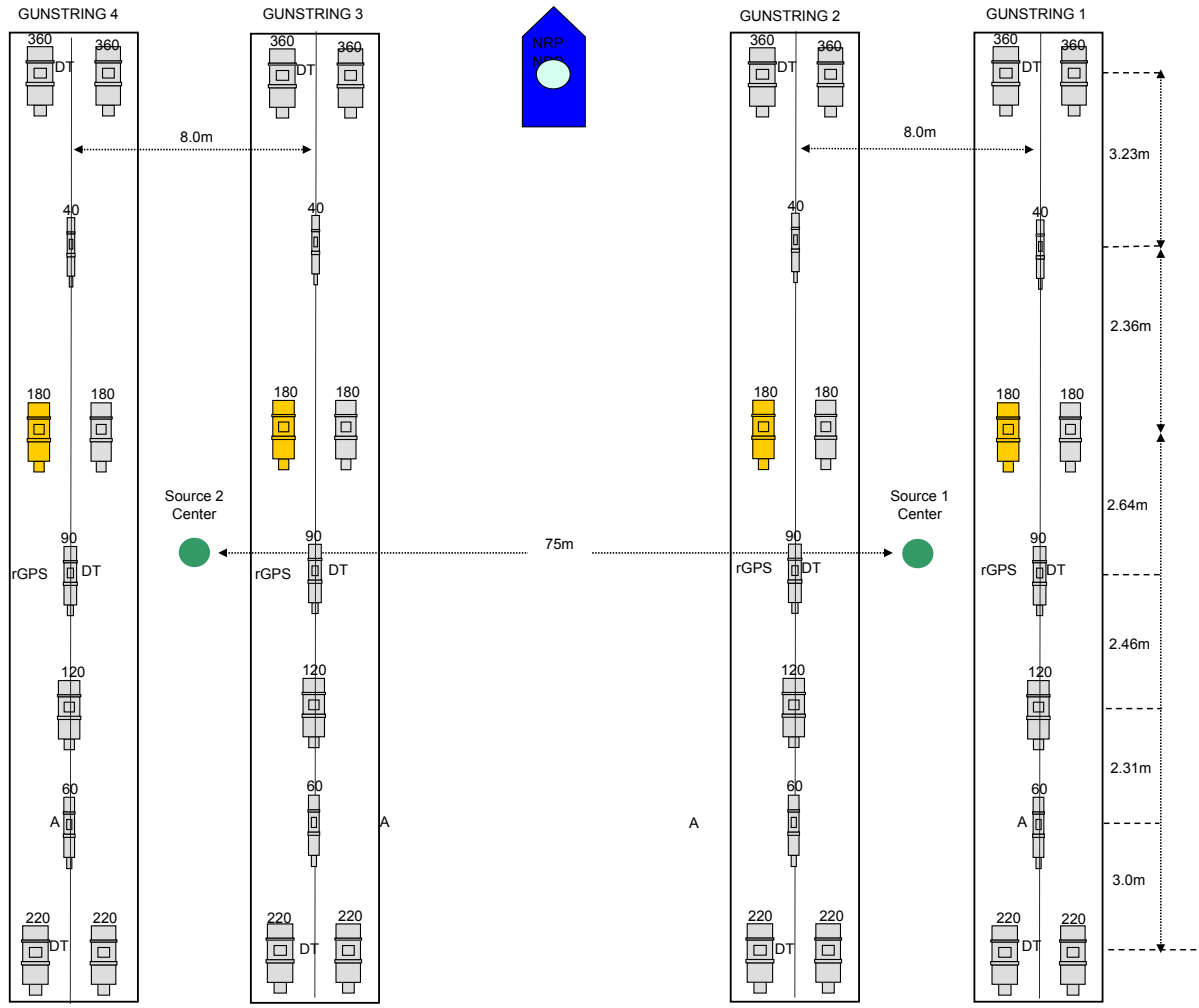
DT = Depth Transducer  
 A = Acoustic  
 P = Pressure Sensor - located  
 in front of gun's 1 & 2

● Center of Source 1 & 2

■ Spare Gun

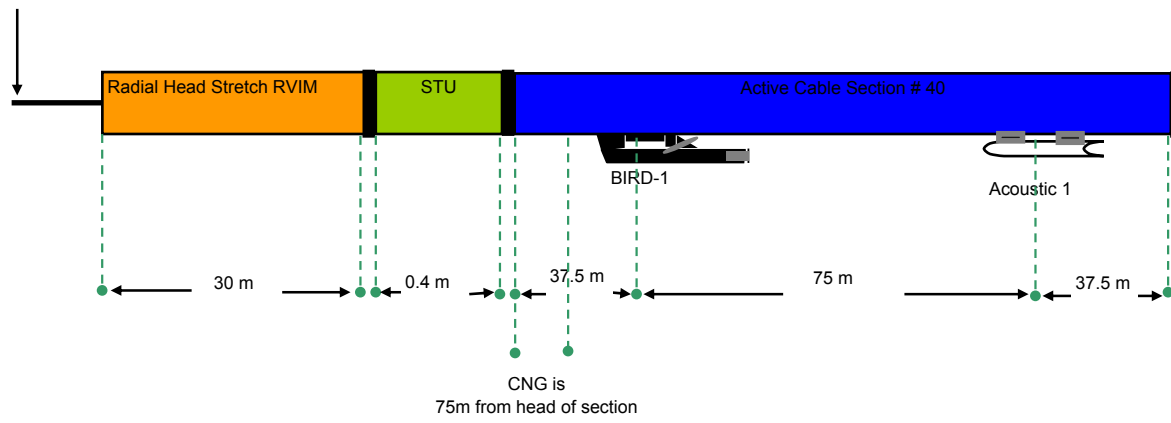
Cluster Guns are mounted 1m apart  
 String 1 cluster 9 & 10 mounted  
 horizontally  
 String 2, 3, & 4 all clusters mounted  
 vertically.

All measurements in meters



# R/V Marcus G. Langseth - Streamer Front End

Lead-in:  
Outer = 505m  
Inner = 465m



TO Shot Predict

