

Company : LDEO - Lamont Doherty Earth Observatory  
Vessel : Marcus G.Langseth  
Client : USGS  
  
Project : MGL-1506 ECS2D  
Area : Offshore North Carolina  
Start Date : 10 April 2015

Vessel Sensor Offsets

Towing Offsets

Towing Configuration

Acoustic Offsets

Gun Array Offsets

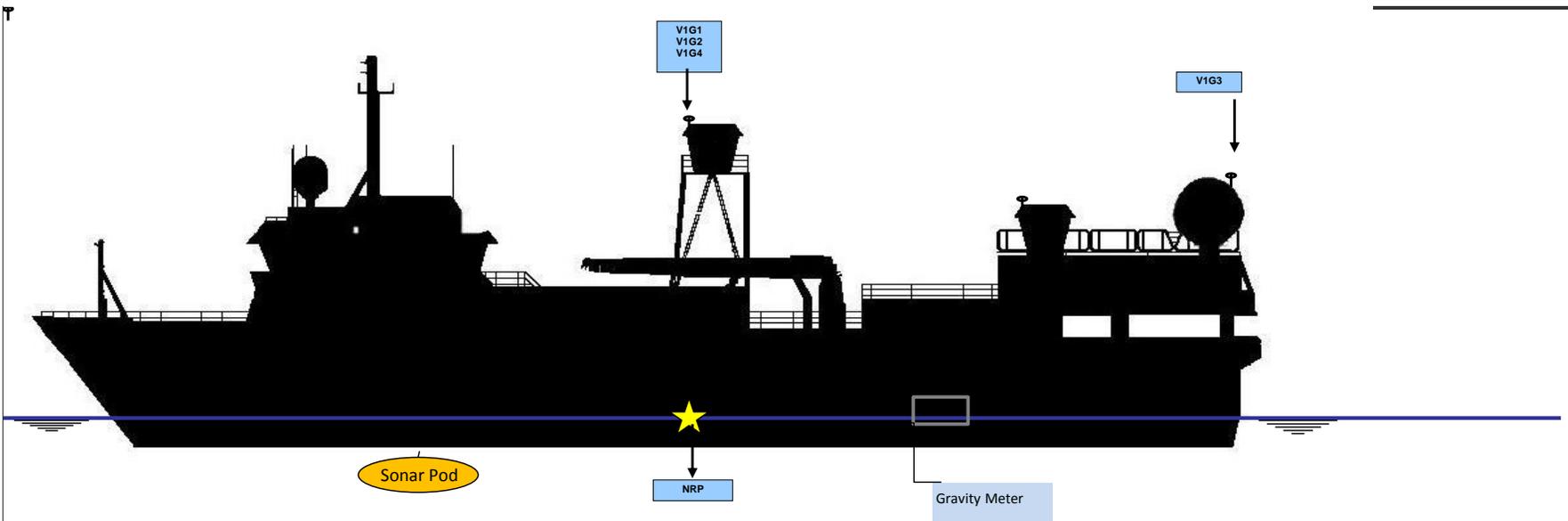
Gun Configuration

Streamer Front End

Tailbuoy Offsets

Timing

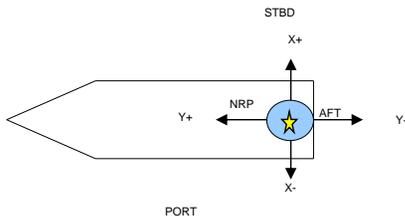




Negative values are above water line  
All measurements in meters



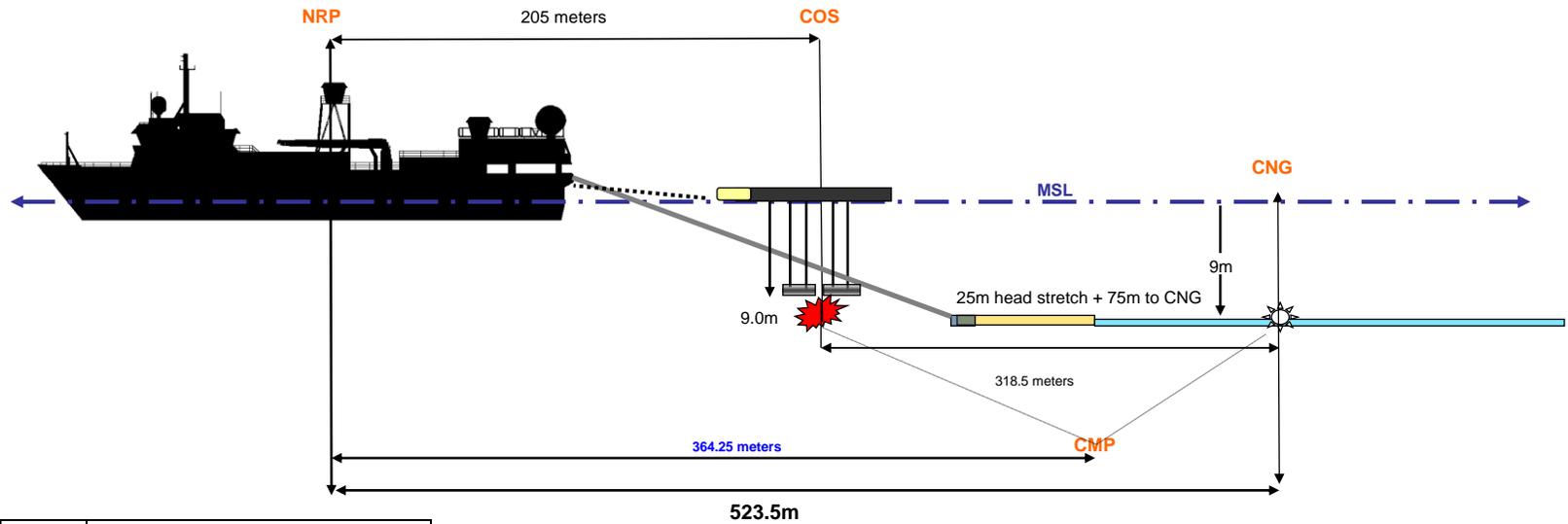
		STBD/PORT (X)	FORE/AFT (Y)	UP/DOWN (Z)
NRP	NAVIGATION REFERENCE POINT	0.00	0.00	0.00
V1G1	C-Nav 3050	0.00	0.00	-16.90
V1G2	SeaPath 200	0.00	1.50	-16.90
V1G3	C-Nav 2000	-2.10	-29.20	-14.50
V1G4	Pos MV	-1.30	1.20	-16.90
V1R1	PosNet	-1.30	0.00	-16.90
Sonar Pod	EM122 Knudsen ADCP	0.00	20.20	7.49
MRU	Seapath MRU	2.30	-14.16	-4.30
BGM	Bell Gravity Meter	0.00	-13.10	-3.49



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

# R/V Marcus G. Langseth - Towing Offsets

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

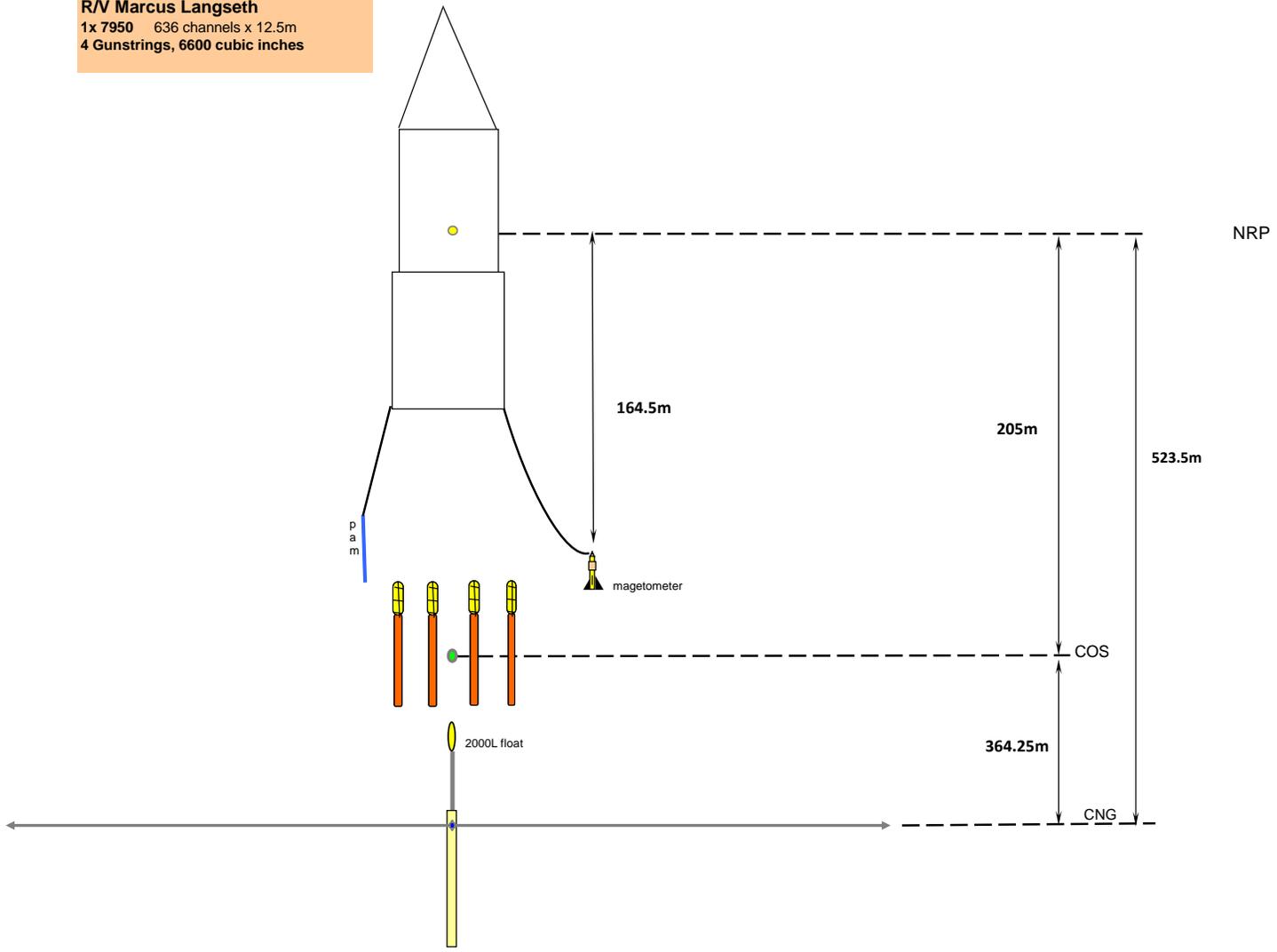


NRP	Nav Reference Point
COS	Centre of Source
CNG	Centre of Near Group (Trace # 636 of:S1)
CMP	Common Mid-Point
MSL	Mean Sea Level
NRP-Stern	29.5m
NRP-COS	205



All measurements in meters

**R/V Marcus Langseth**  
1x 7950 636 channels x 12.5m  
4 Gunstrings, 6600 cubic inches

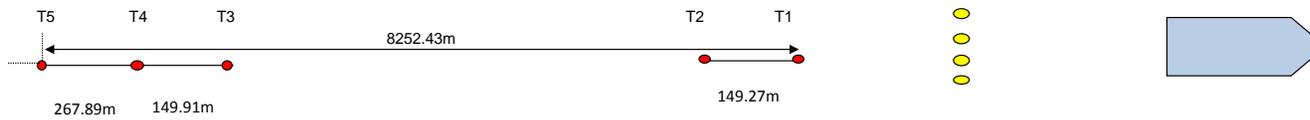


NOT to Scale

# R/V Marcus G. Langseth - Acoustic Offsets

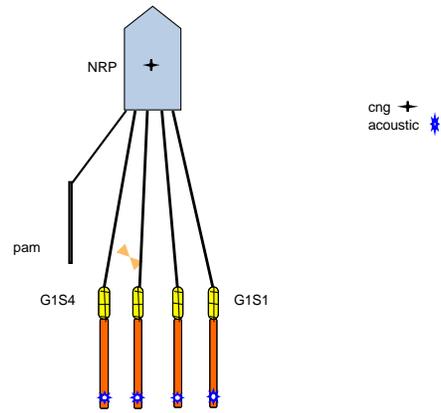
## Digicourse

- Digicourse CTX Transceiver 4029
- Digicourse Streamer CMX Acoustic Transceiver
- T5 is located on the tailbuoy referenced to the rgps
- All ranges are 2-Way



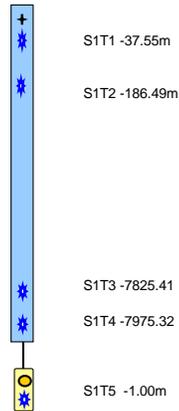
All measurements in meters

cng -> S1T1 = -37.5m  
 cng -> S1T2 = -187.5m  
 G1S1 -> G1T1: x = 0.0 y = -8.0m z = -11.875m  
 G1S2 -> G1T2: x = 0.0 y = -8.0m z = -11.875m  
 G1S3 -> G1T3: x = 0.0 y = -8.0m z = -11.875m  
 G1S4 -> G1T4: x = 0.0 y = -8.0m z = -11.875m

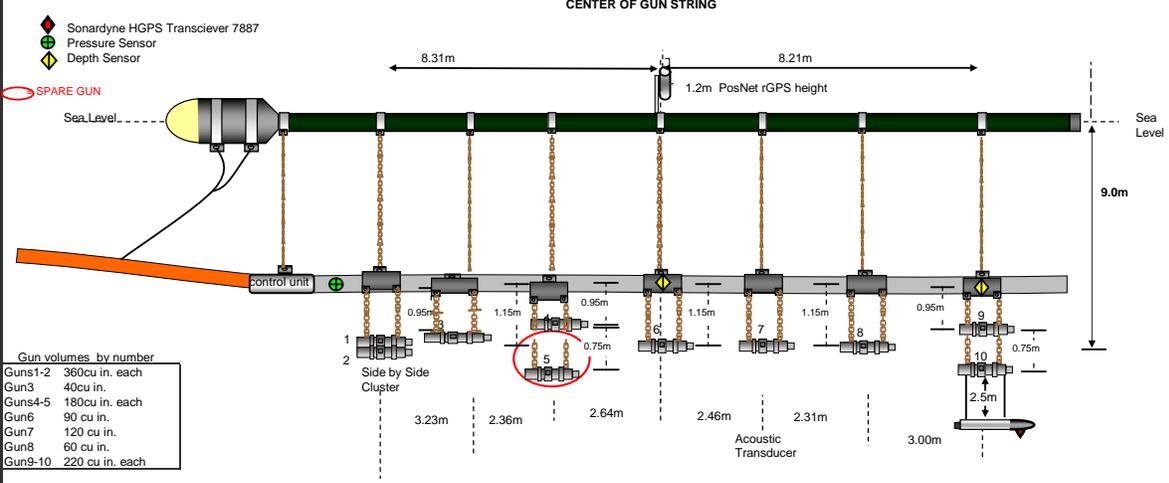


Cable acoustic offsets are referenced to cng on individual streamer

Tailbuoy acoustics referenced to RGPS pod



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



Gun volumes by number	
Guns1-2	360cu in. each
Gun3	40cu in.
Guns4-5	180cu in. each
Gun6	90 cu in.
Gun7	120 cu in.
Gun8	60 cu in.
Gun9-10	220 cu in. each

Array total volume (without spares) is 6600 cubic inches.  
 Guns 1 & 2 hang in a horizontal cluster, 4-5 and 9-10 are vertical clusters - all gunstrings  
 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  
 Single guns hang from hanger 1.15m  
 All measurements in meters **NOTE: drawing not to scale**

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

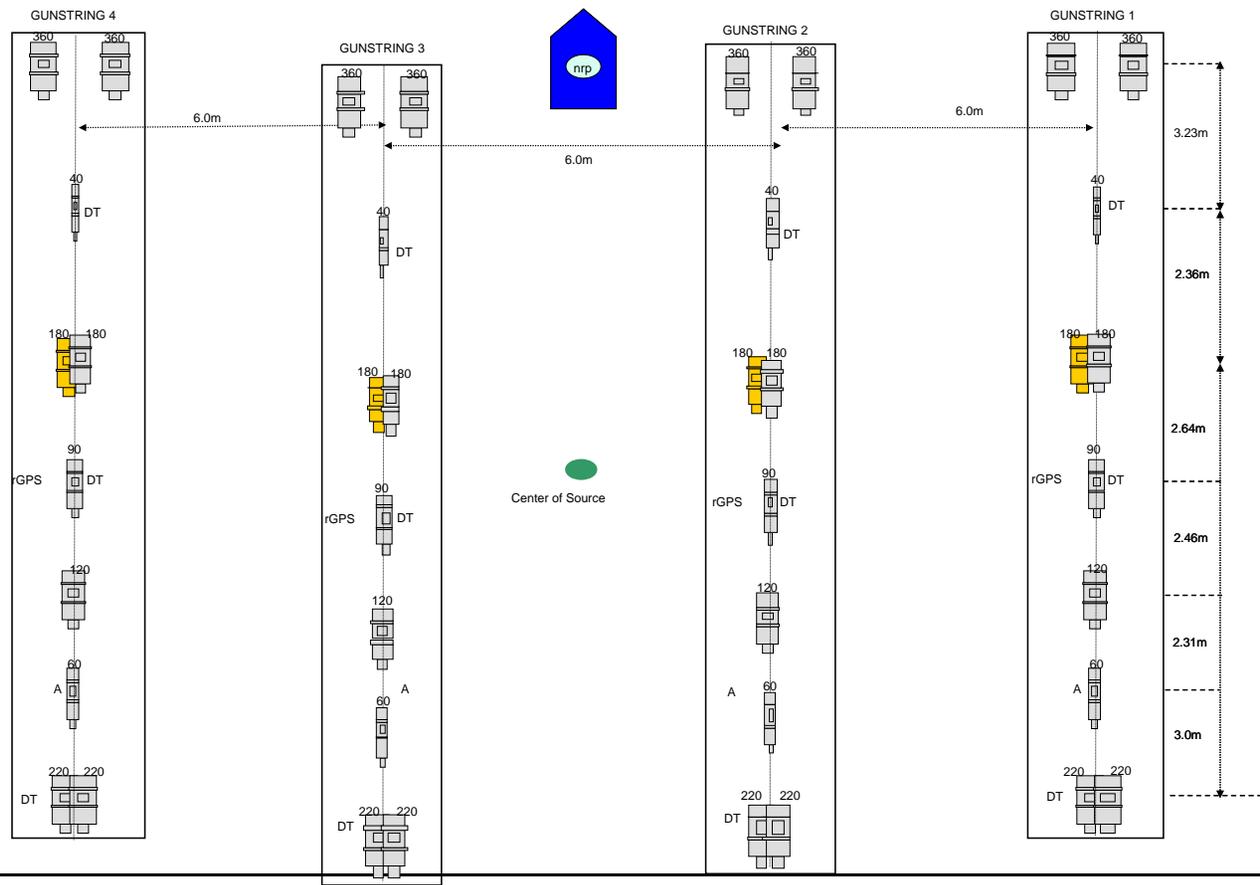
### r/v Marcus G. Langseth - Gun Configuration

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

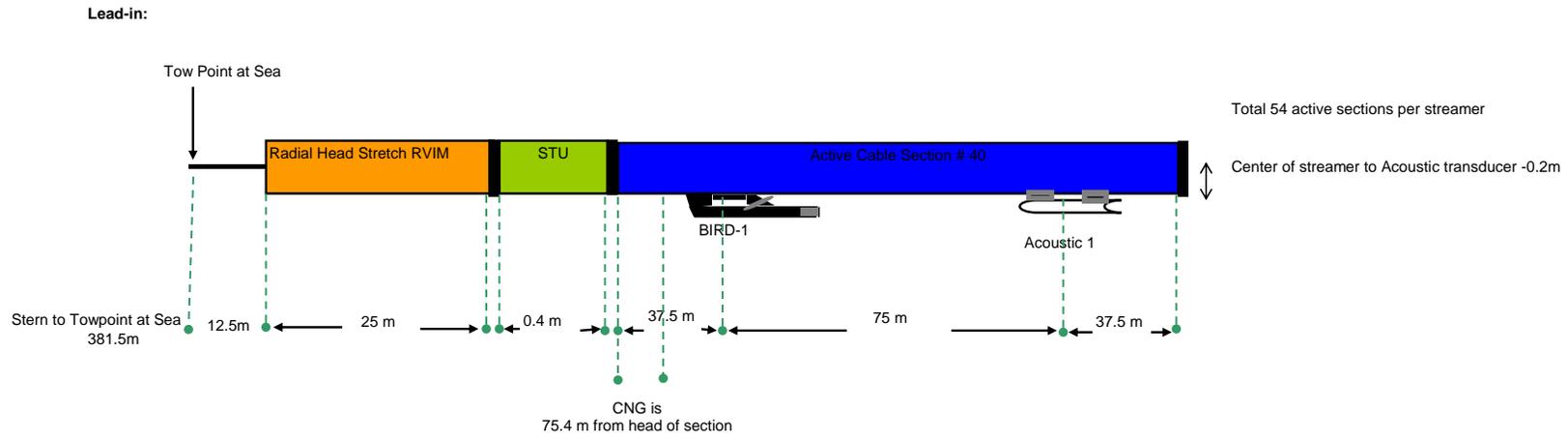


Gun Clusters  
 Guns 1 & 2 horizontal array  
 Guns 4 & 5 vertical array  
 Guns 9 & 10 vertical array

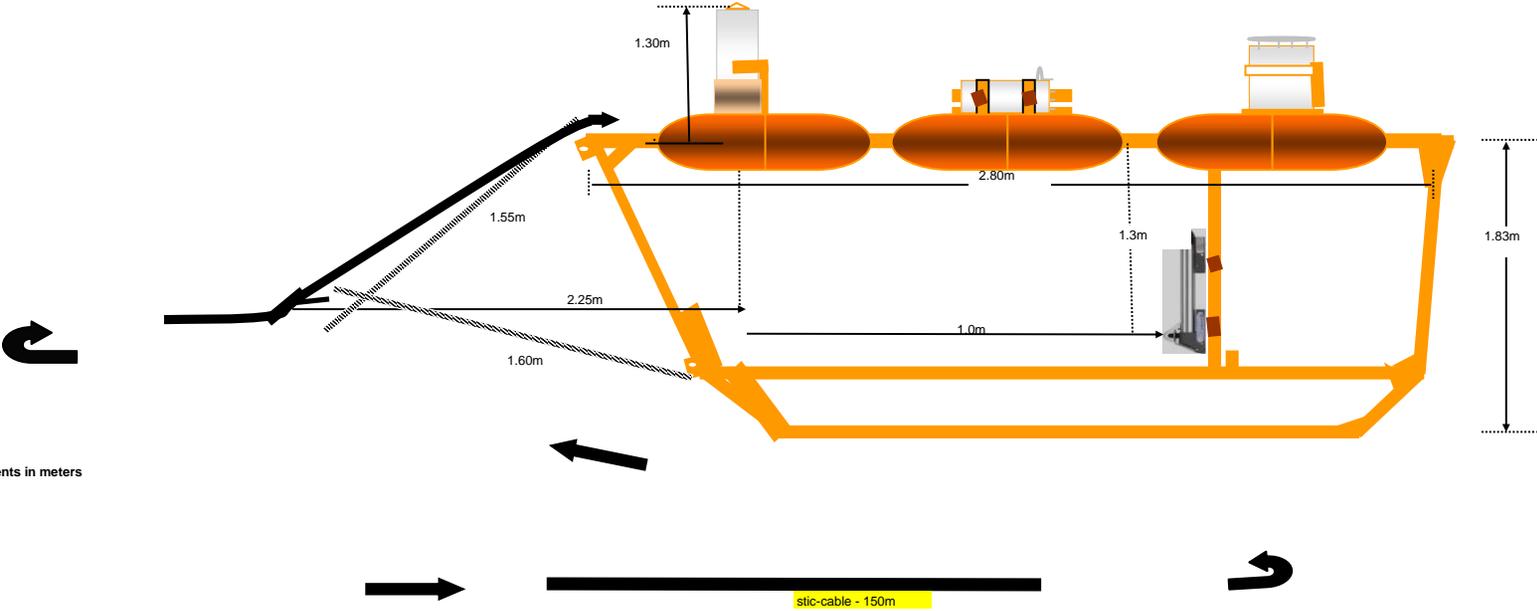
All measurements in meters



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



R/V Marcus G. Langseth - Tailbouy



All measurements in meters

Spectra timing for R/V Marcus G. Langseth

