

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

Project: MGL2003
Area: Andreanof Experiment
Start Date: 1-Sep-20

Vessel Sensor Offsets

Towing Offsets

Towing Configuration

Acoustic Overhead

Gun Array Offsets

Streamer Front End

Streamer Tail End

Streamer Complete

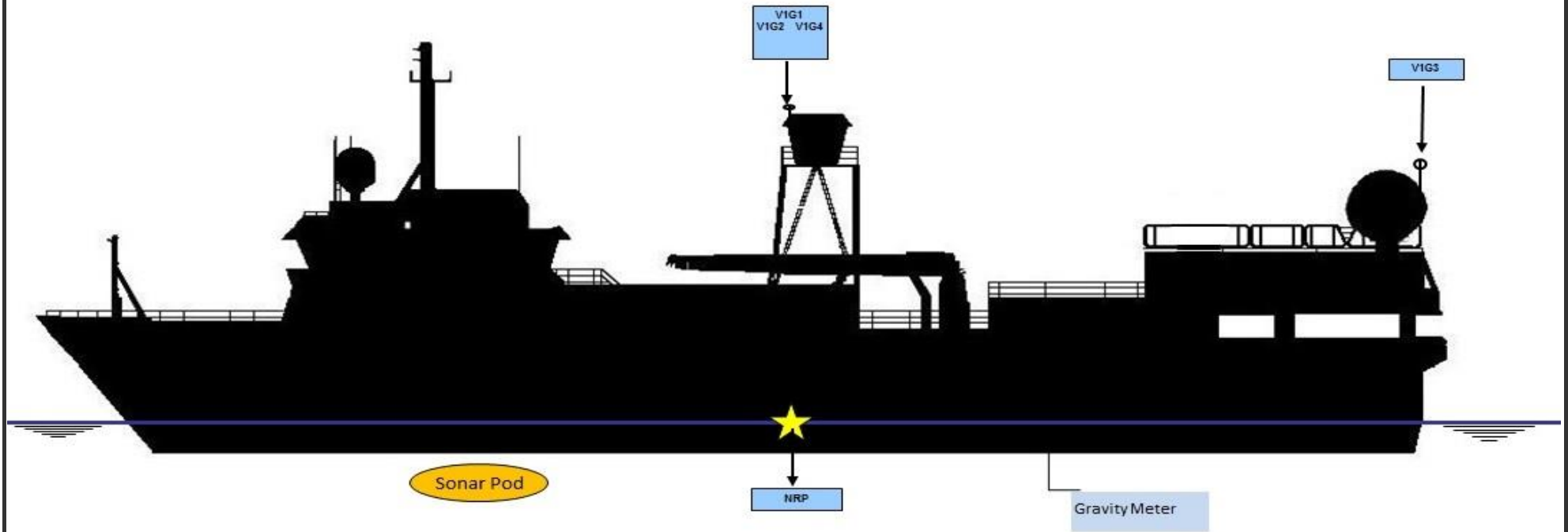
Hydrophone Offsets

Tailbuoy Offsets

Timing

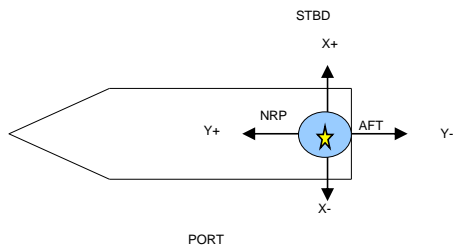


R/V Marcus G. Langseth - Vessel Sensor Offsets



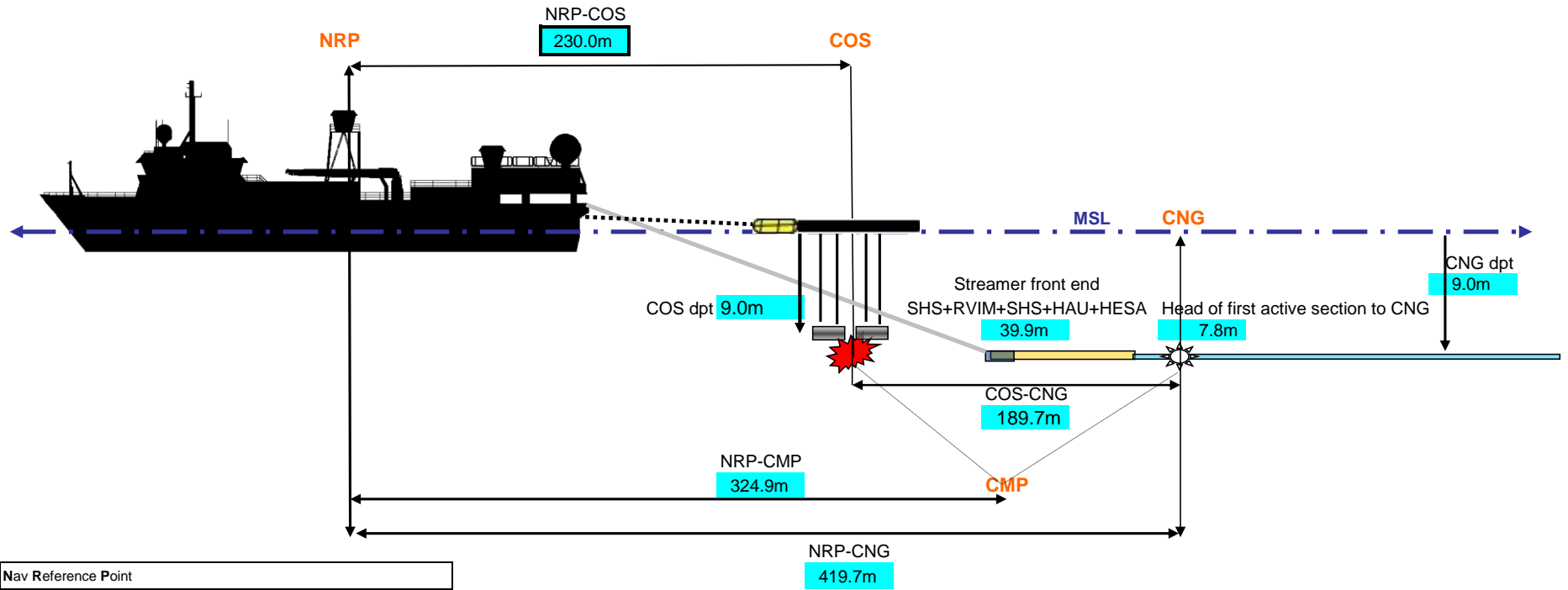
Negative values are above water line

All measurements in meters



		STBD/PORT (X)	FORE/AFT (Y)	UP/DOWN (Z)	
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	
	EM122 Center Beam offset (in Spectra)	0.00	13.4	7.49	
MRU	Seapath MRU	2.30	14.16	-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-Sterr	29.5m
NRP-COS	230.0m

All measurements in meters

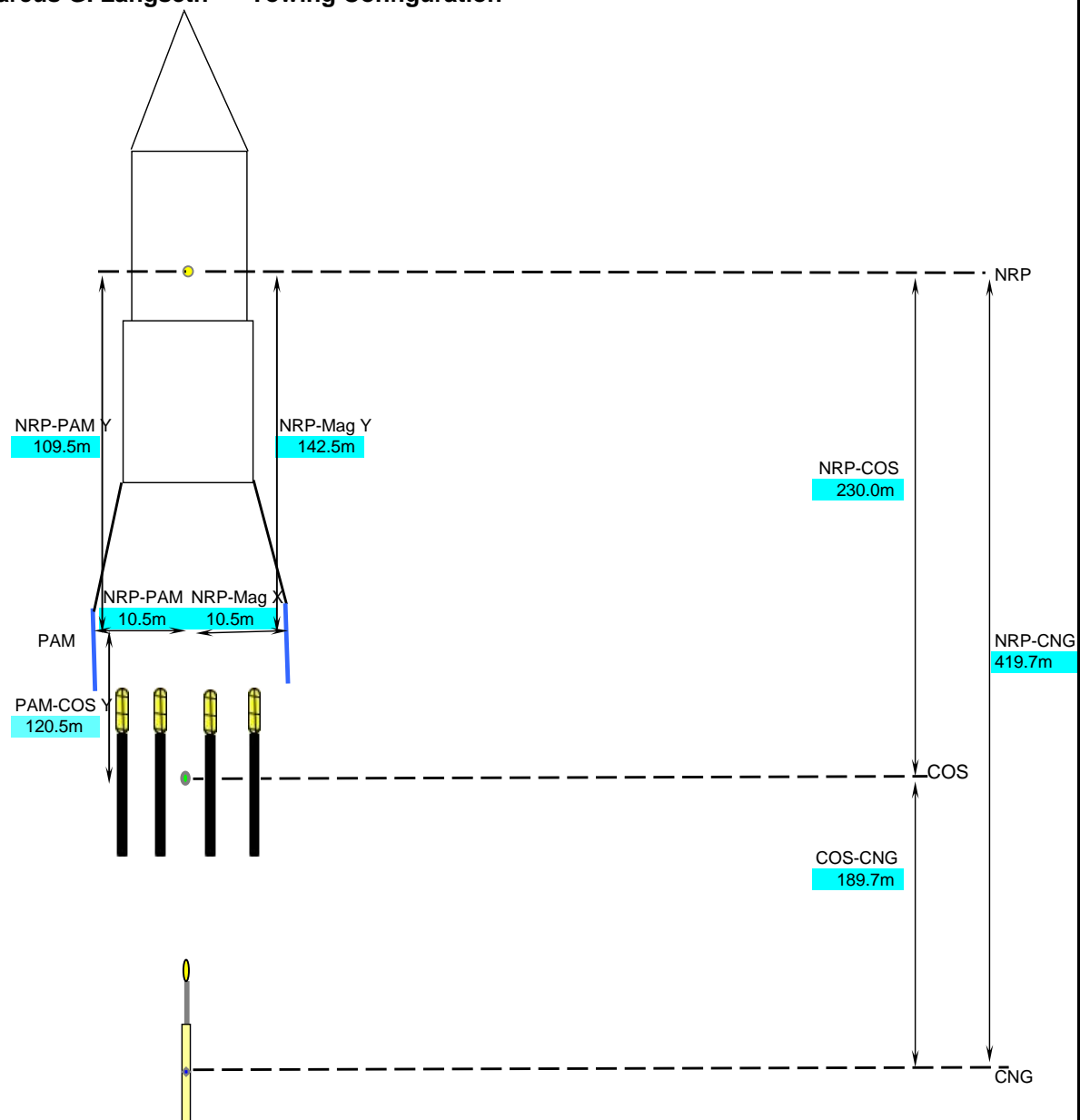


Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Towing Configuration

	# Streamers	Length	Channels	Spacing
SEAL	1	9000	720	12.5m

# Gun Strings Used	Vol (in^3)
4	6600



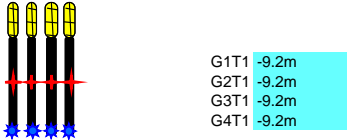
NOT to Scale

Cell contents referenced from Config_offsets tab

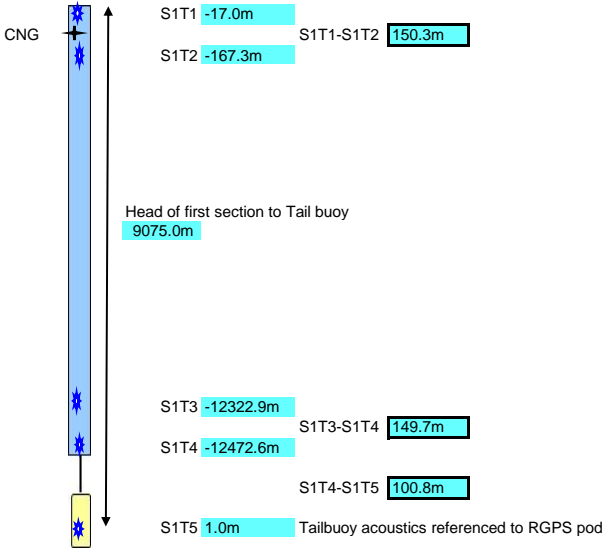
R/V Marcus G. Langseth - Acoustic Offsets



Source acoustic offsets are referenced to COS on individual gun string

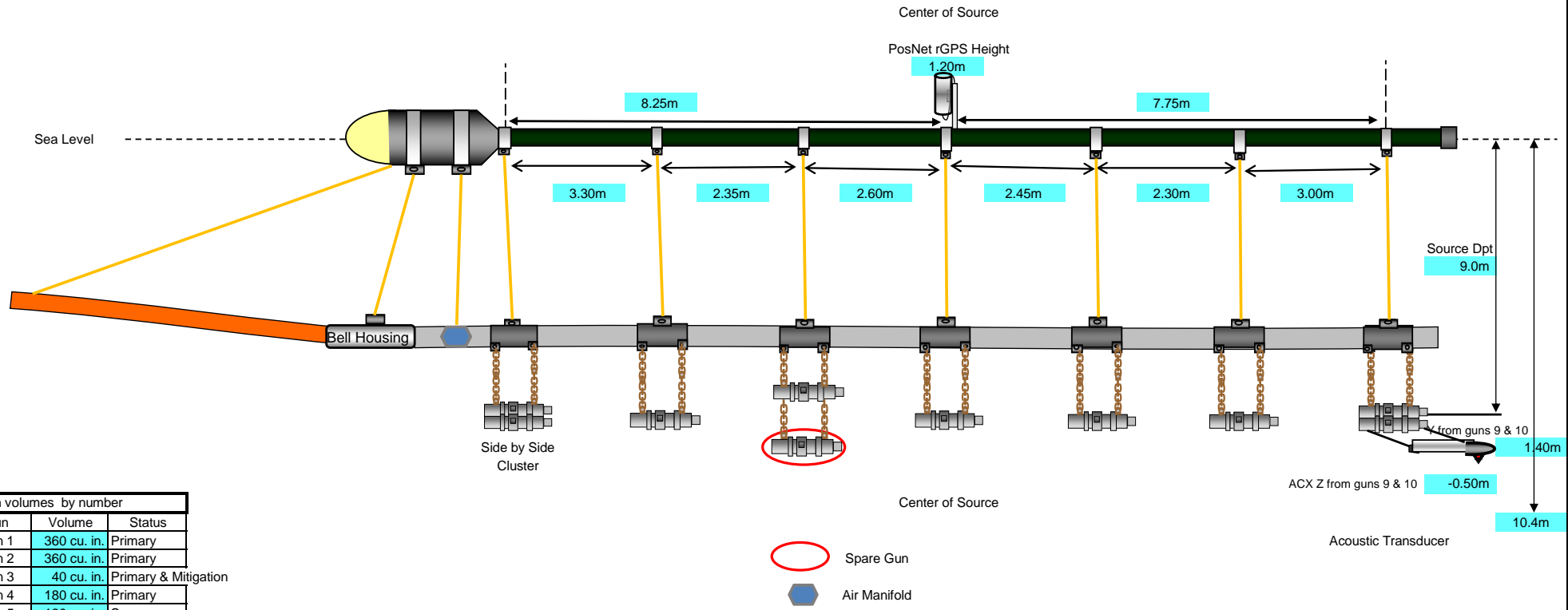


Streamer acoustic offsets are referenced to CNG on individual streamer



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	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

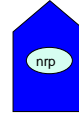
Guns 4 & 5 vertical - lower gun is spare only

Guns 9 & 10 horizontal array

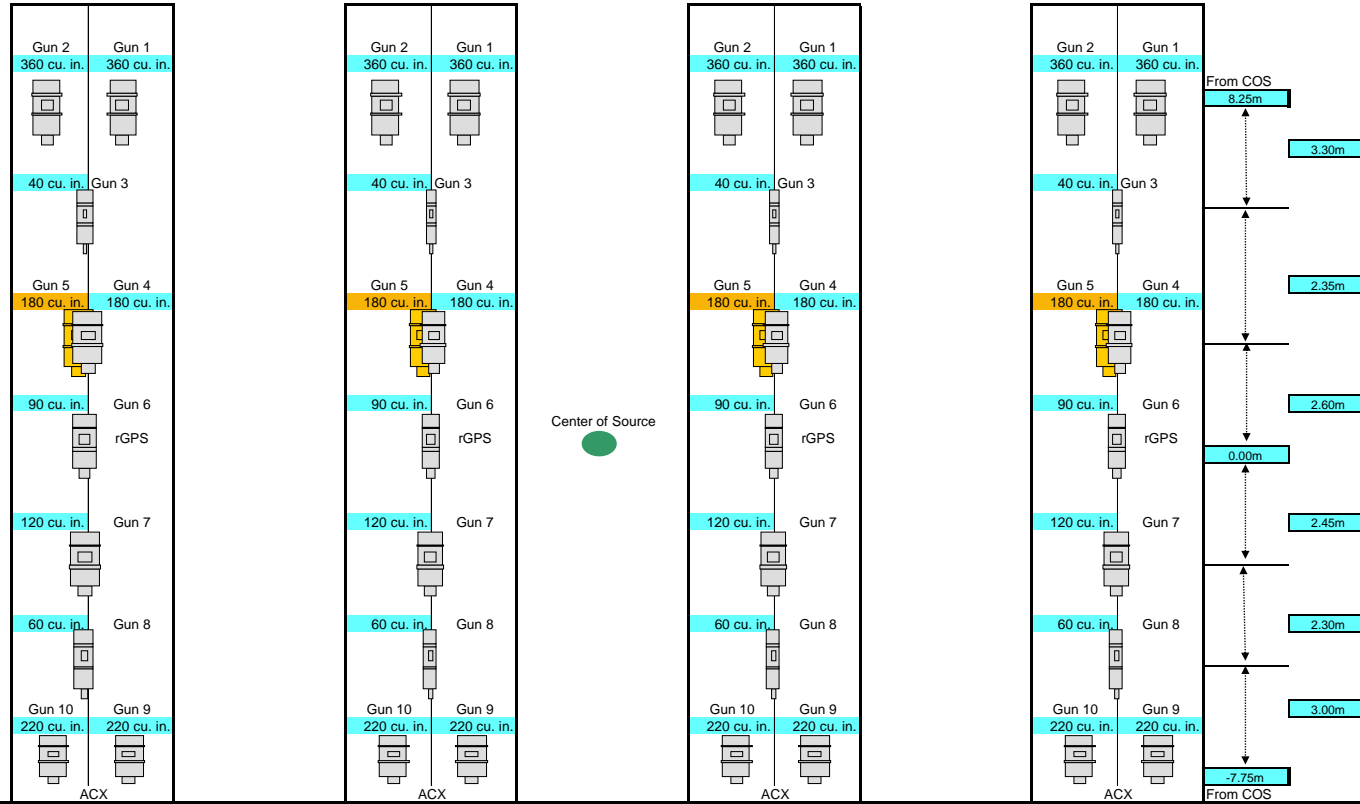
Gun Offsets relative to Center of String

	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

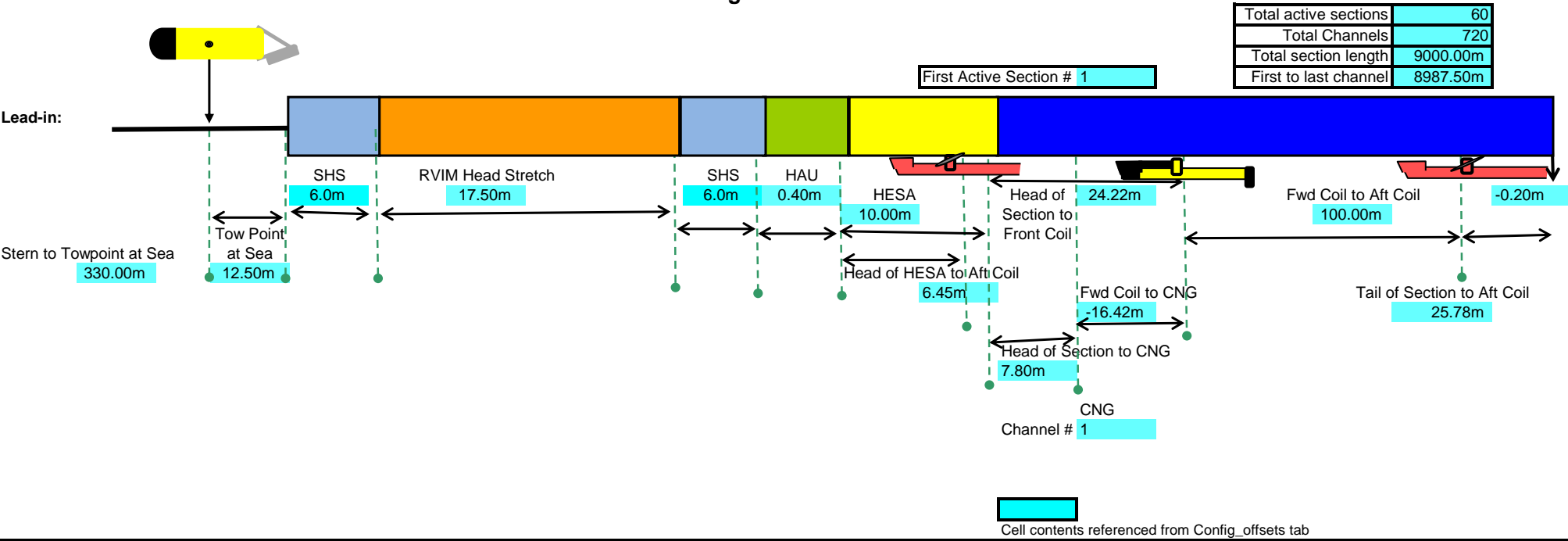
All measurements in meters



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



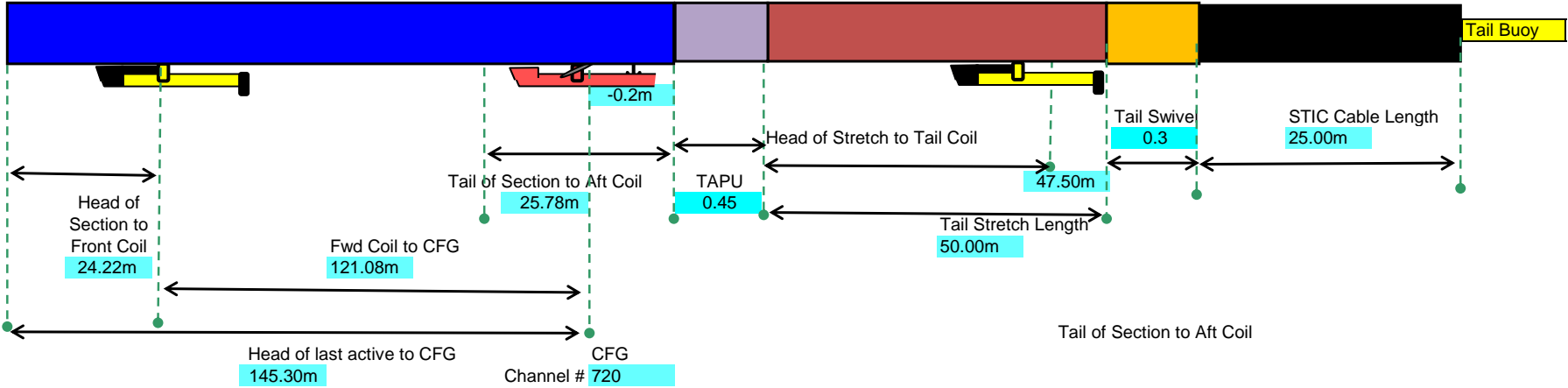
R/V Marcus G. Langseth - Streamer Front End



R/V Marcus G. Langseth - Streamer Tail End

Total active sections	60
Total Channels	720
Total section length	9000.00m
First to last channel	8987.50m
CFG to TB RGPS	81.95m

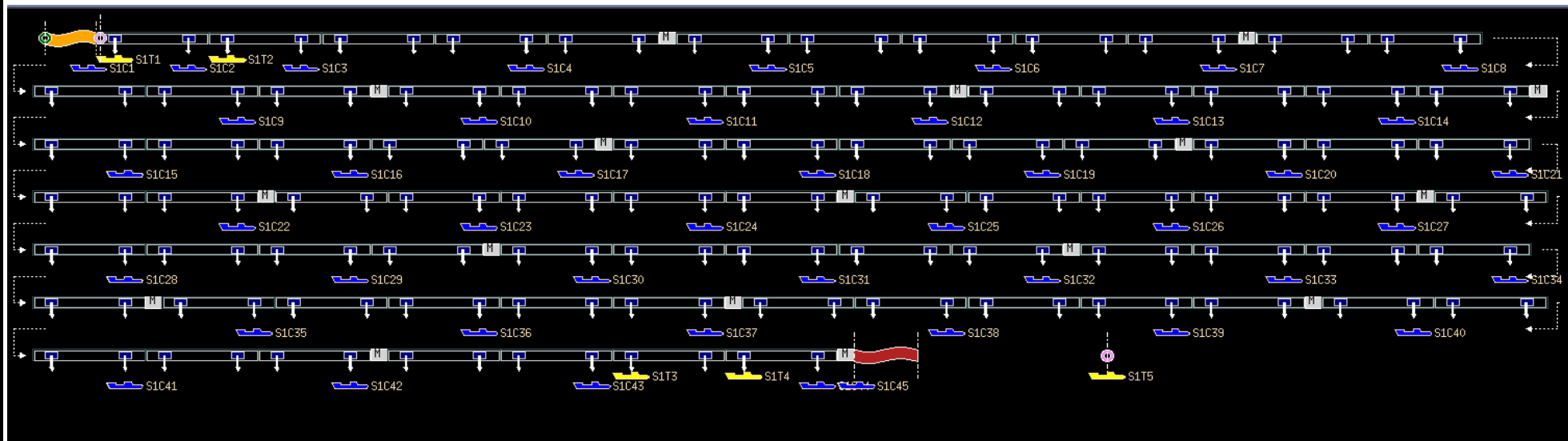
Last Active Section # 60



Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Streamer Complete

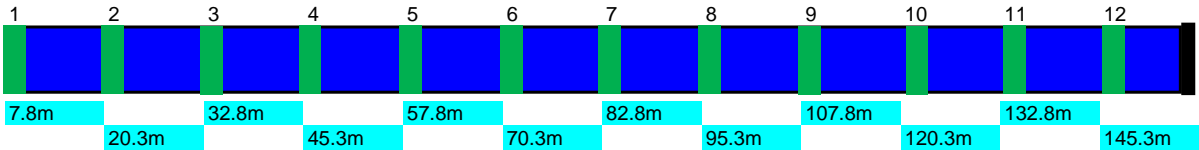
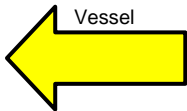
Total active sections	60
Total Channels	720
Total section length	9000.00m
First to last channel	8987.50m



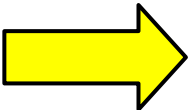
Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Hydrophone Offsets
Sercel 150meter SSAS

Number of SSAS Sections 60
Channels per active section 12
Total channels 720

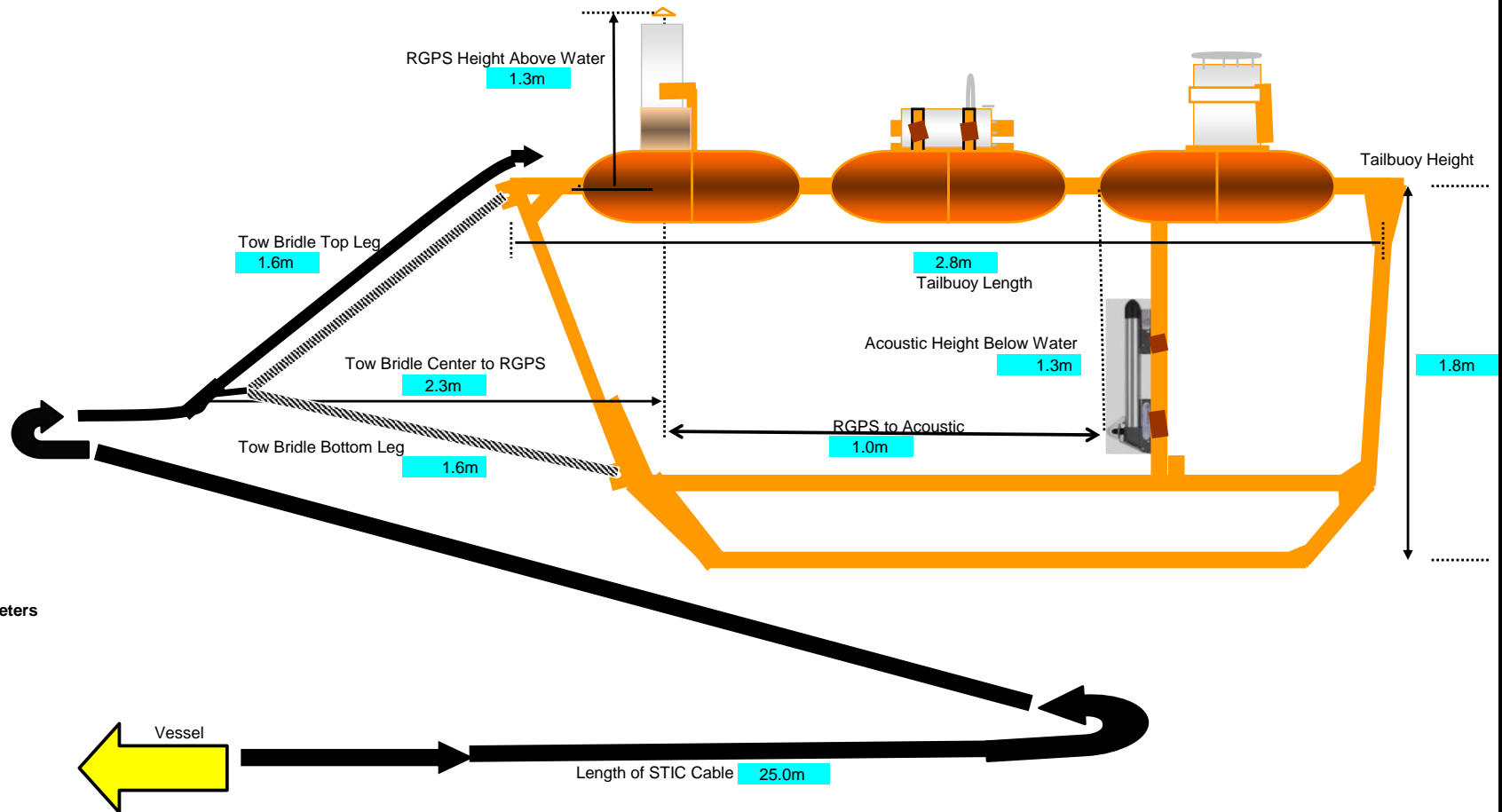


Tail buoy



Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Tailbuoy



Cell contents referenced from Config_offsets tab

Job Specifics	
WRP in COG V	230
WRP in COG X	0
Source Depth	9
Streamers Depth	9
# streamer sections	60
# channels	720
CNG Channel #	1
CFG Channel #	720
MICS Streamers	1
lead-in stream to tow point on sea	330
MCS Streamer Size	0
Gun volume total	60500
Volume per string	1650
# of guns used	36
# Gun Strings	4
gun string separation	6
PMW in stern beam	0
PMW # (outside of stern beam)	180
PMW # (inside of stern beam)	113
Stream to MAG V	3
Stream to MAG X (outside of stern rail)	

Food Preference	Score range
Wheat to Steep	29.5
low point of wheat to end of lead-in	12.5
STU/module length	0
Coil to coil	100
Head to section to lead	24.22
tail of section to coil	25.77
chopper/scissors	12.5
Wheat to Pouch/STBD Rail	7.5
Head to First RX	7.5
Head to Last RX	145.3
Chopper per section	12
Center of section to box transfer	-0.2
First Section Number	1
HUB/HATCH Length	0.6
LES Length	6
RVM Length	17.5
HESA Length	10
Active Section Length (TOSAS)	150
TES tail stretch length	150
HTS	25
TBS Pad Coil	25
TBS Pad Coil	25
HESA AB Coil	6.5

Tailbuoy offsets	
RGPS height above water	1.3
TB length	2.8
TB height	1.83
RGPS-ACX	1
Reels-RGPS	2.25
Top Leg	1.55
Bottom Leg	1.6
STP	25
ACX below water line	1.3

Element Offset (Bytes)	
MRP to CMP	324.80
COS-CNG	189.75
CNG-CFG	4987.50
MRP-Mbg Y	142.50
MRP-Mbg X	10.50
MRP to last busy ROPS	9464.40
Total Length of Streamer sections	9000
PMA-COS Y	120.50
PMA-COS X	10.50
MRP-PMA Y	109.50
MRP-PMA X	10.50
MRP-COS	419.75

Guns	
Source GPS-COS Y	0
Bracket distance 2-1	2.35
Bracket distance 3-4	3.35
Bracket distance 4-5	2.6
Bracket distance 5-6	2.45
Bracket distance 6-7	2.25
Bracket distance 7-8	3
COS - Acoustic Y	-6.47
GPS height above water line	1.2
G1 Volume	350
G2 Volume	360
G3 Volume	40
G4 Volume	180
G5 Volume	180
G6 Volume	90
G7 Volume	120
G8 Volume	40
G9 Volume	220
G10 Volume	220

[illegible]

Derived Offsets (Formula)	
Towing Offsets Tab	
NRP-COS	20
NRP-CNG	419
NRP-CMP	324.4
COS-CNG	188
CNG Channel #	
NRP-Stem	25
Distance from Head of first section to CNG	7
Source Depth	
Streamer Depth	
Front End Length	35

General Chemical Properties		
Twisting Configuration TAB		
MRP-COS		230
MRP-CNG		415.9
COS-CNG		189.9
MRP-Plastic		0
COS-Plastic		0
COS-Plastic		0
In-Cable Streamers Sep		0
MRP-PAB Y		109.0
MRP-PAB X		10.0
PAB-COS Y		120.5
PAB-COS X		10.0
# Gum Strings		4
Ign volume		6500
Gum separation		0
# 2D Streamers		1
2D Streamer Sep Spacing		12.5
Number 2D Streamers		720
2D Streamer Sep Spacing		9000
2D Streamer Sep		10
MRP-MAG X		10.0
MRP-MAG Y		142.0

K	0.9
Y	8.31
K	0
Y	-0.4
K	8.31
K	0
Y	5.03
K	0
Y	2.6
K	0
Y	2.6
K	0
Y	0
K	0
Y	-2.74
K	0
Y	-5.09
K	0.4
Y	-8.21
K	-0.5
Y	-8.21

Demand Offsets	
Acoustic Overhead TAB	
G1T1	-9.15
G2T1	-9
G3T1	-9.15
G4T1	-9.15
S1T1	-16.95
S1T2	-167.28
S1T3	-12322.92
S1T4	-12472.6
S1T5	0
S1T6	0
S1T7	0
S2T1	0
S2T2	0
S2T3	0
S2T4	0
S2T5	0
S2T6	0
S2T7	0
S3T1	0
S3T2	0

S3T4	0
S3T5	0
S3T6	0
S3T7	0
S4T1	0
S4T2	0
S4T3	0
S4T4	0
S4T5	0
S4T6	0
S4T7	0
Front to TB	9075
S1T1-S1T2	150.33
S1T3-S1T4	149.68
S1T4-S1T5	106.777

Detailed Characteristics	
Core army elements	
Breach distance 0-1	1
Breach distance 2-3	3.1
Breach distance 3-4	2.35
Breach distance 4-5	1.8
Breach distance 5-6	2.65
Breach distance 6-7	2.3
Breach distance 7-8	2
ScenarioPGS-COS V	
COS - Assault V	-5.47
GPST height above SL	1.2
G1 Volume	380
G2 Volume	390
G3 Volume	40
G4 Volume	180
G5 Volume	180
G6 Volume	90
G7 Volume	90
G8 Volume	230
G9 Volume	230
G10 Volume	30
G Depth 1	0.95
G Depth 2	0.95
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G Depth 4	0.95
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Downed Officers	
Steamer Front End	
Steam-towpoint at sea	3300
towpoint at sea to end of lead-in	12
BHS Length	6
min length	17.3
HAU/STU Length	0.4
HESA Length	10
Feed Coil to All Coil	100
Feed to Piece BX	7.3
Feed Coil to CNG	-16.43
Feed to Tail Coil	24.22
Tail to All Coil	25.77
CNG Channel #	1
Center of steamer to Ace Helicopter	-0.2
First Section #	1
# channels	720
section length	600
# sections	90
channel speed	12.5
First to last	8897.5
HESA Feed to all coil	6.40

Delivered Cessals	
Steamer Tail End	
Head to Feed Coil	24.22
Tail to Air Coil	25.77
Head to C/FG	145.5
Coil to Coil	108
TAPU Length	0.40
Tail Switch Length	50
Traveled Length	0.7
STC Length	21
Last active	
# channels	720
# sections	60
total section length	9000
First to last	8887.7
Switch Coil	
Center of streamer to Act Transducer	-0.1
channel	12.5
C/FG	720
Feed coil to C/FG	121.07
C/FG to TBSPUS	81.95
Switch head to feed coil	2.1
Switch head to aft	47.7

Derived Offsets	
Streamer complete	
#Sections	4
# Channels	72
First to last	8087
Total section length	900

Derived Offsets	
Hydrophone Offsets	
Channel 1	7.83
2	20.30
3	32.80
4	45.30
5	57.80
6	70.30
7	82.80
8	95.30
9	107.80
10	120.30
11	132.80
12	145.30
# channels	12
# Active's	12
Total Channels	70

Derived Offsets	
Tail buoy offsets	
RGPS height above water	
TB length	
TB height	1
RGPS-ACX	
Birdie-RGPS	2
Top Leg	1
Bottom Leg	
STIC	
ACX below water line	