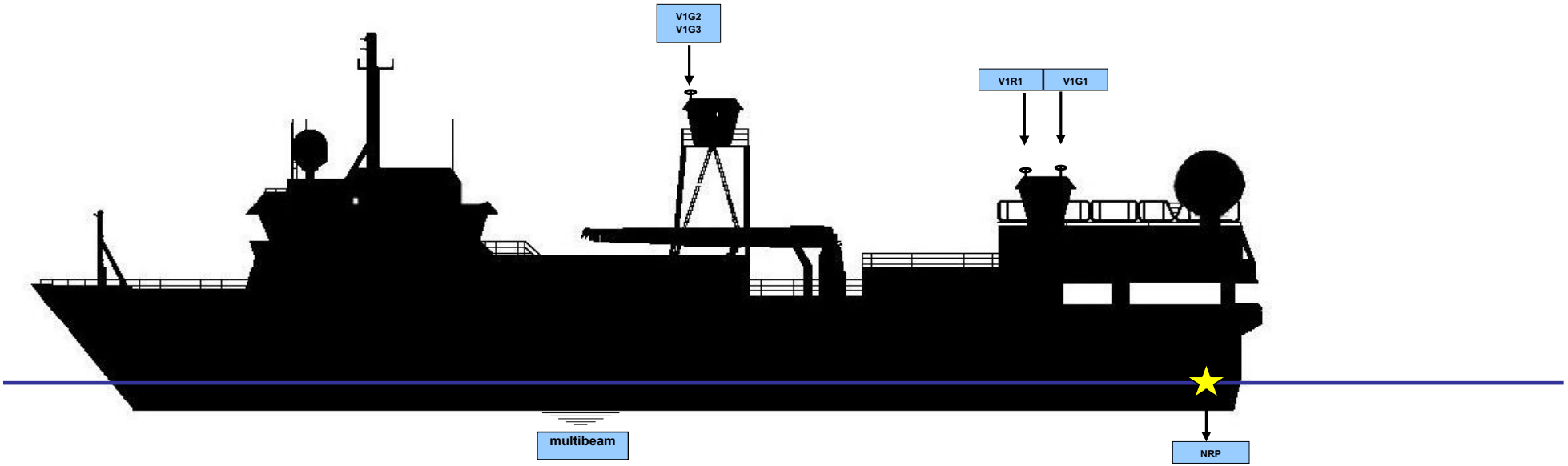
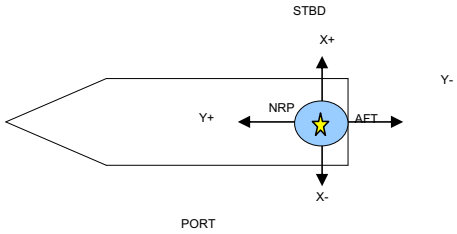
Company	:	LDEO
Vessel	:	Marcus G.Langseth
Client	:	NSF
Project	:	MGL-0906 Taiger
Area	:	Taiwan
Start Date	:	04 May 2009

r/v Marcus G. Langseth





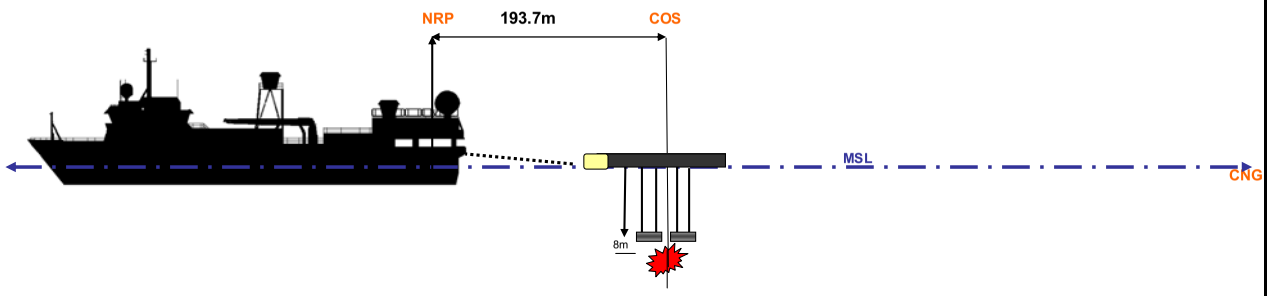
Note: All Echosounders are used in Spectra with 6.6m ship's draft correction applied.

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	8.06	4.87	14.50
V1G2	SeaPath 200	25.30	1.50	16.90
V1G3	Pos MV	22.30	8.50	16.90
V1G4	PosNet	10.45	4.87	14.50
V1R1	PosNet	10.45	4.87	14.50
EM120	Multibeam	49.70	8.50	-6.60

R/V Marcus G. Langseth - Towing Offsets

*** Offsets used for sequences 001 - 015



*** Offsets used for acquisition ***

NRP-Stern	4.20	m	
NRP-COS	193.70	m	
NRP-CNG			
COS-CNG			
NRP-CMP			

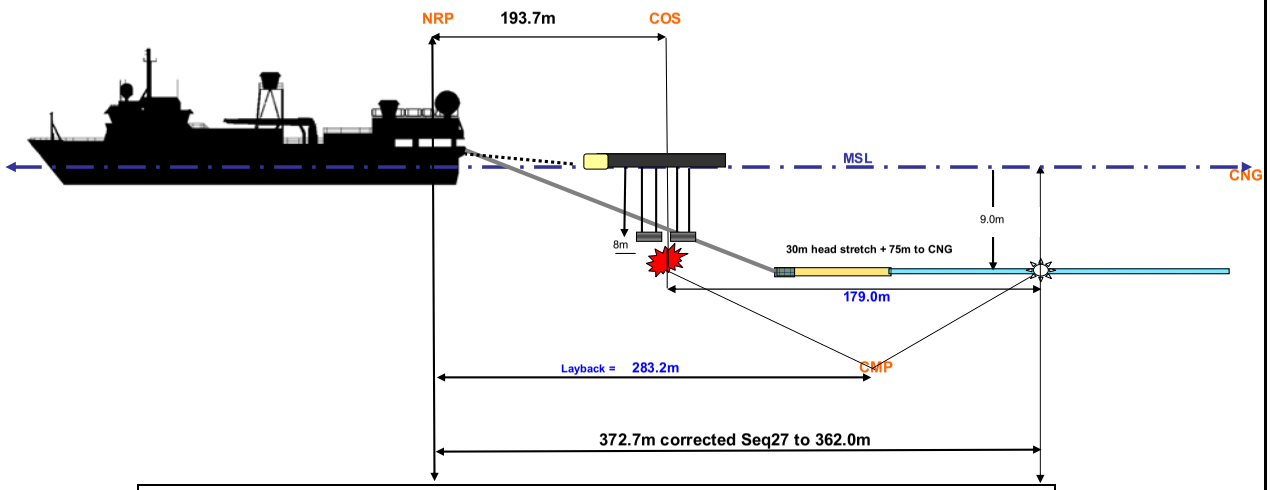
NRP	**N**av **R**eference **P**oint
COS	**C**entre of **S**ource

All measurements in meters

R/V Marcus G. Langseth - Towing Offsets

*** Offsets used for sequences 016- XXX ***

Note: NRP->CNG offset change to 362.0m at seq027 to end of Taiger2



*** Offsets used for acquisition ***

NRP-Stem	4.20	m	
NRP-COS	193.70	m	
NRP-CNG	372.70	m	Seq27 now 362.0m
COS-CNG	179.00	m	
NRP-CMP	283.20	m	layback

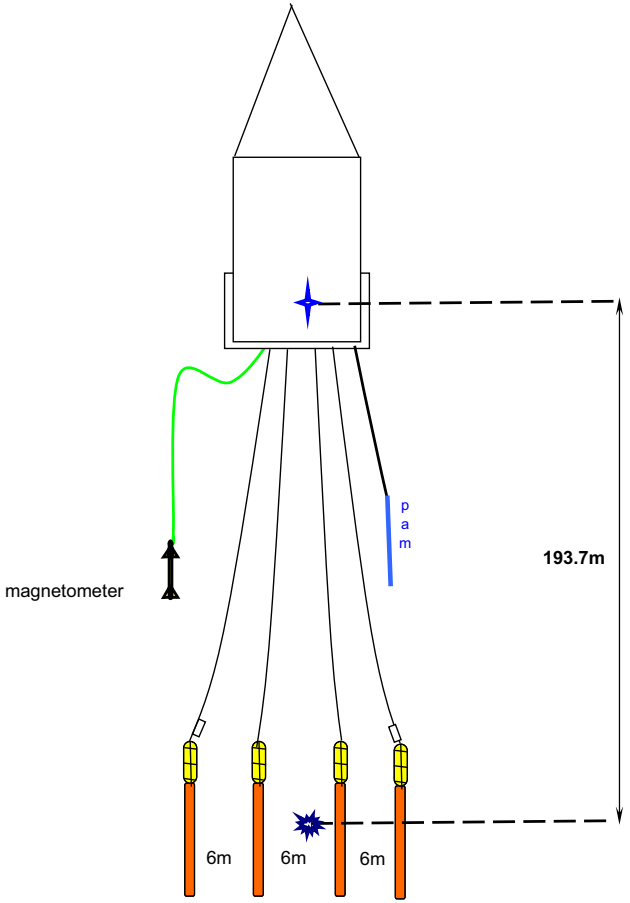
NRP	Nav Reference Point
COS	Centre of Source
CNG	Centre of Near Group (Trace # 001)
CMP	Common Mid-Point
MSL	Mean Sea Level

All measurements in meters

rv Marcus G. Langseth - Tow Configuration

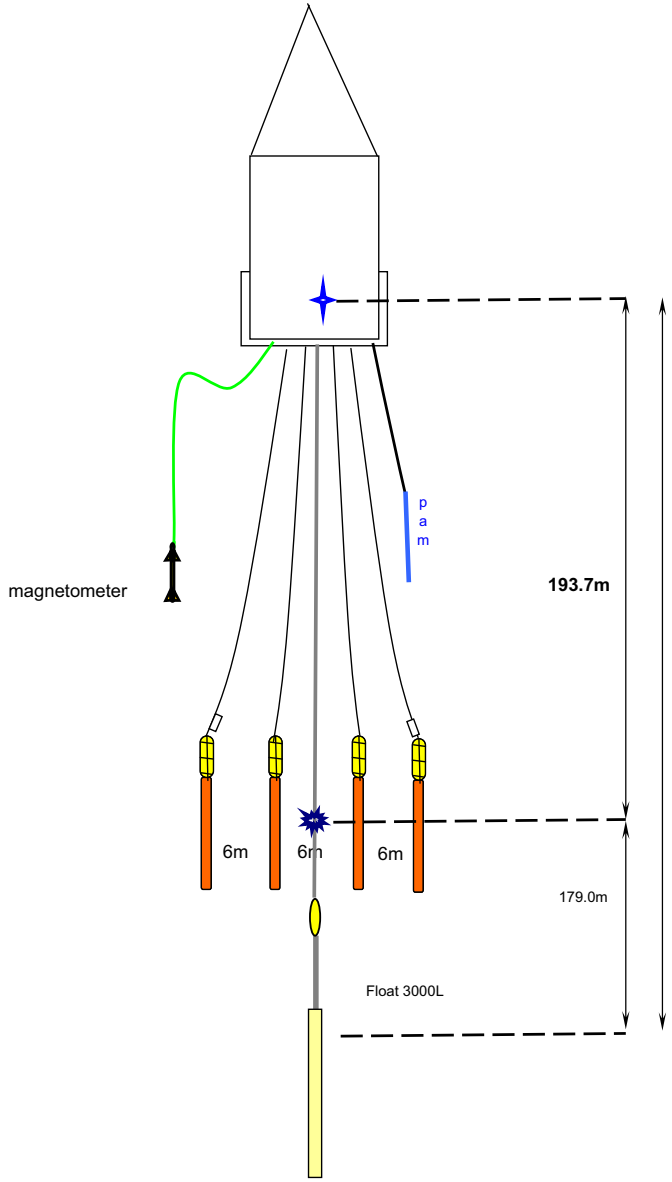
Source only

Sequences 001 - 015					
NRP-Stern	4.20	m		**NRP**	**N**av **R**eference **P**oint
NRP-COS	193.70	m		**COS**	**C**entre of **S**ource
			Layback		
NRP-MAG	100	m	X = -20m		
NRP-PAM	70	m	X = 20m		



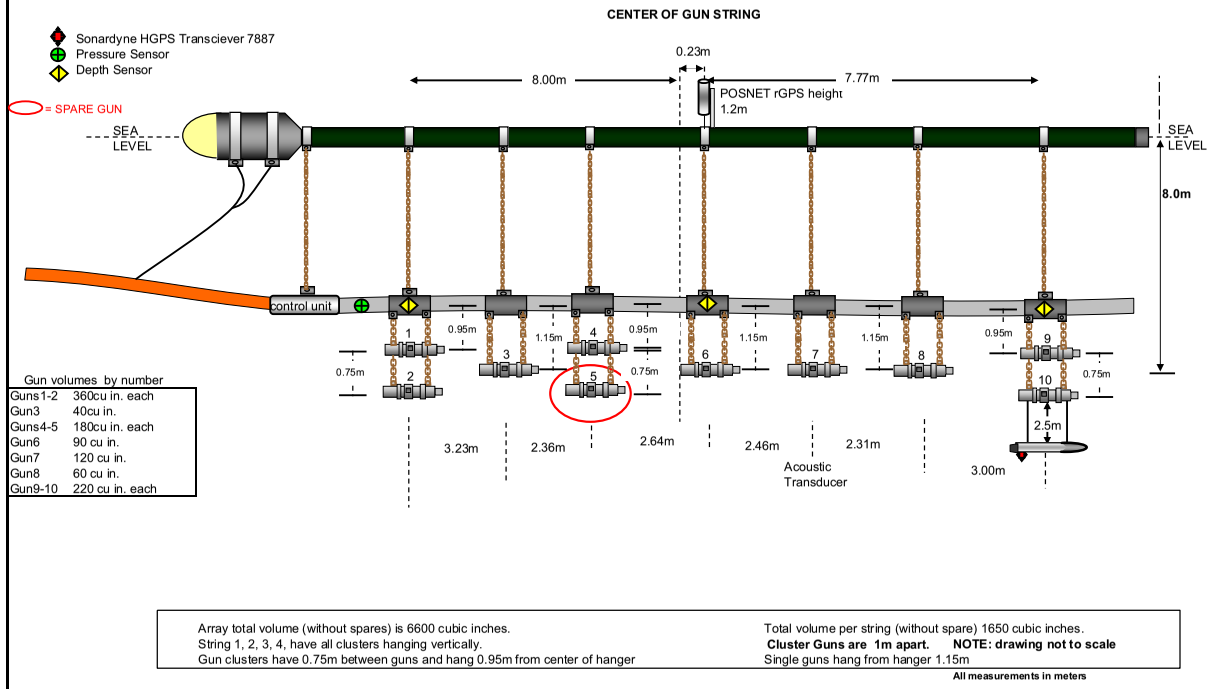
Source/Streamer

Sequences 016 - xxx					
NRP-Stern	4.20	m		**NRP**	**N**av **R**eference **P**oint
NRP-COS	193.70	m		**COS**	**C**entre of **S**ource
NRP-CNG	372.70	m	362.0m	**CNG**	**C**entre of **N**ear **G**roup (Trace # 468)
COS-CNG	179.00	m		**CMP**	**C**ommon **M**id-**P**oint
NRP-CMP	283.20	m	Layback		
NRP-MAG	100	m	X = -20m	NRP->CNG changed from seq027 to end of trip	
NRP-PAM	70	m	X = 20m	was 372.7m. now 362'0m.	



NOT to Scale

R/V Marcus G. Langseth - Gun Array Offsets



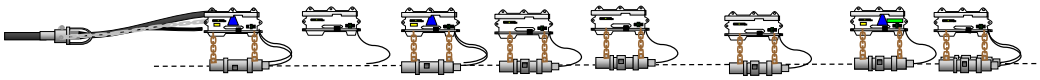
Gun volumes by number

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

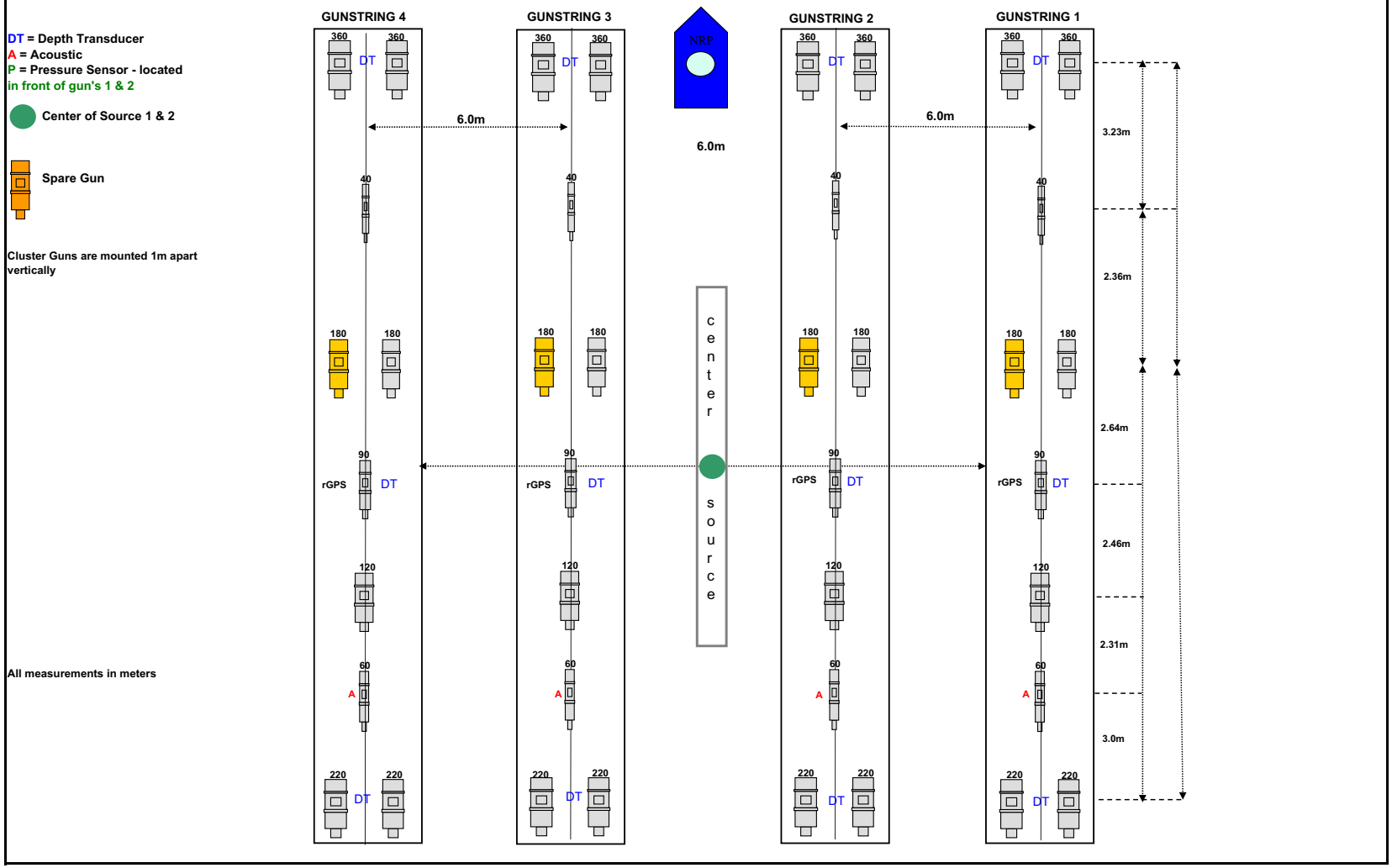
Array total volume (without spares) is 6600 cubic inches.
String 1, 2, 3, 4, have all clusters hanging vertically.
Gun clusters have 0.75m between guns and hang 0.95m from center of hanger

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



r/v Marcus G. Langseth - Gun Configuration

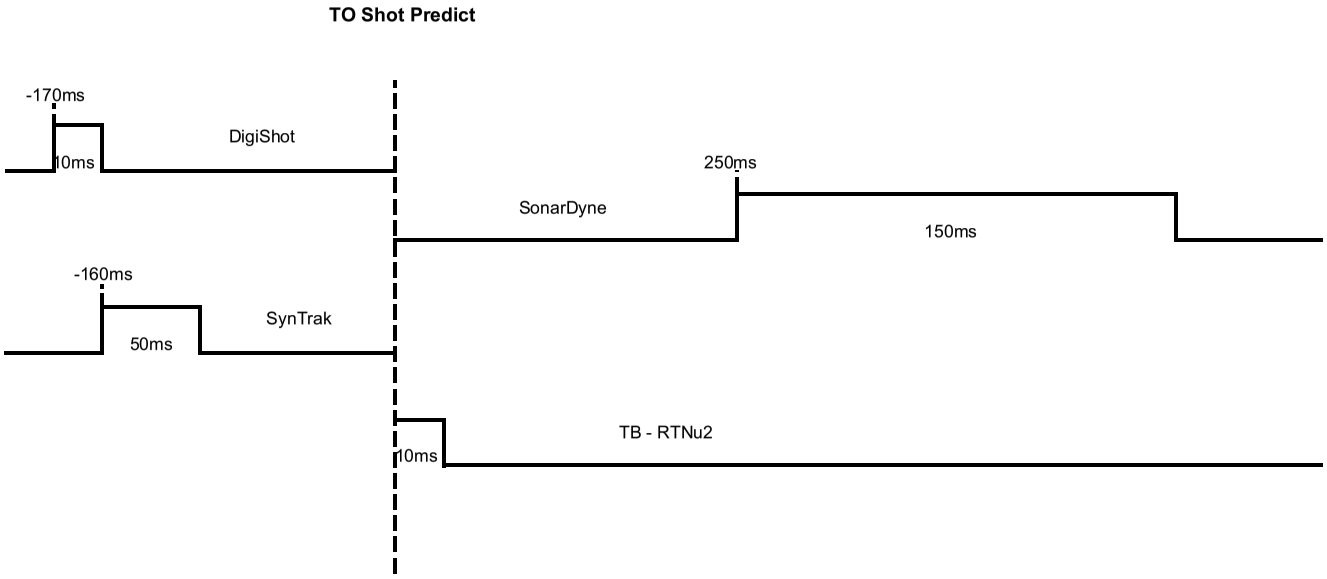


R/V Marcus G. Langseth

SPECTRA TIMING

taiger 2

MGL0905



Spectra timing for r/v Marcus G. Langseth