

SPCMSC FAN#	Crew:	Dates:
Kinematic Rover	Recording Interval (s)	Comments
Platform (boat, buggy, pole, etc)	R/V TWIN UEE	ASHTECH REC Yellow
Receiver Make/Model#	ASHTECH Z EXTREME 800889 REV D	279.4 cm ANT to DUCER BASE
Receiver S/N#	ZE 1200526034	10.9 cm STERN OFFSET
Antenna Model or P/N#	THALES CHOKERING 701945-02 REVE	0.631 m top of CAN to DUCER BASE
Antenna S/N#	CR6200548008 J	1.601 m BAR CHECK
Antenna Height (m)		
Offset Diagram? Photos?		
Primary Static Base Information	Recording Interval (s)	Comments
Base Location	TMRK	- BGAN BASE BOX
NGS PID # if applicable		PROFLEX REC SMG-PF500-1
Base Site Name:	TMRK	- JD 192 SWAP CR FOR GNSS ANT
Receiver Make/Model#	PROFLEX 500	P/N AT1675-7MW S/N 5480
Receiver S/N#		ANT HT 2.00 + 0.611 = 2.611 m
Antenna Model or P/N#	THALES CR 701945-02 REVE	
Antenna S/N#	CR6200538004	
Tripod Height (m)	2.00 m +	
Diagram? Photo?	Photos	
Secondary Static Base Information	Recording Interval (s)	Comments
Base Location	BERM 2	2012 BASE BERM NOW IN WATER
NGS PID # if applicable		PROFLEX REC SMG-PF500-2
Base Site Name	BERM 2	HTDP AVERAGED position:
Receiver Make/Model#	PROFLEX 500	30 00 28.67750 N
Receiver S/N#		88 30 51.281955 W
Antenna Model or P/N#	ASHTECH 700936 REV D	-27.2005 m
Antenna S/N#	CR131149	492 changed choke out for GNSS
Tripod Height (m)	2.00 m + 0.611 = 2.611 m	P/N = AT1675-7MW / S/N = 5491
Diagram? Photo?	YES Photos	ANT HT 2.00 + 0.611 = 2.611 m

Kinematic Receiver Log

[illegible]

USGS SPCMSC Logsheet - Sound Velocity

USGS SPCMSC FAN#		13BIM03		UTM Zone =		16N		Time Zone =		Central (DAYLIGHT)	
DATA LOG											
SVP File Name	Date Taken	DOY YY	Time	Latitude or Easting	Longitude or Northing	Depth (m)	Hypack Target Taken	SWATHplus "Here and Now"			
V000037.TXT 13BIM03_SVP001	7/12/13	193	14:29:58	88 51 13.7976	30 00 39.7048	0.69	Yes	V000038.TXT			
13BIM03_SVP002	7/12/13	193	15:15:52	88 54 02.0522	29 59 28.2484	6.11	Yes	V000039.TXT			
V000039.TXT 13BIM03_SVP003	7/12/13	193	15:48:29	88 54 49.6219	30 01 32.0885	7.48	Yes	V000042.TXT			
13BIM03_SVP004	7/12/13	193	16:20:39	88 52 31.4339	30 02 33.4265	5.06	Yes	V000043.TXT			
13BIM03_SVP005	7/12/13	193	17:27:05	88 48 55.6484	30 04 10.0540	11.76	Yes	V000044.TXT			
13BIM03_SVP006	7/12/13	193	17:43:17	88 47 50.9608	30 21 14.5205	10.47	Yes	V000045.TXT			
13BIM03_SVP007	7/12/13	193	18:23:57	30 00 58.0625	88 50 47.5389	1.34	Yes	V000046.TXT			
13BIM03_SVP008	7/12/13	193	18:53:03	29 58 46.9039	88 49 32.9684	2.50	Yes	V000049.TXT			
13BIM03_SVP009	7/12/13	193	19:27:43	29 57 26.1486	88 49 24.9184	0.69	Yes	V000050.TXT			
13BIM03_SVP010	7/12/13	193	20:09:31	29 55 39.7382	88 49 08.5963	3.00	Yes	V000051.TXT			
13BIM03_SVP011	7/12/13	193	21:16:59	29 52 15.7876	88 49 35.0827	1.88	Yes	V000052.TXT			
13BIM03_SVP012	7/12/13	193	22:00:08	29 52 11.7324	88 45 59.9649	11.04	Yes	V000053.TXT			
13BIM03_SVP013	7/12/13	193	22:22:59	29 54 39.7231	88 45 45.3201	13.25	Yes	V000054.TXT			
13BIM03_SVP014	7/12/13	193	23:02:19	29 54 37.2872	88 49 12.7630	2.31	Yes	V000055.TXT			
END OF DAY											

USGS SPCMSC Logsheet - Sound Velocity

USGS SPCMSC FAN# <u>13BIM03</u> UTM Zone = <u>16N</u> Time Zone = <u>CENTRAL [DAYLIGHT]</u>								
DATA LOG								
SVP File Name	Date Taken	DOY YY	Time	Latitude or Easting	Longitude or Northing	Depth (m)	Hypack Target Taken	SWATHplus "Here and Now"
13BIM03_SVP015	7-13-2013	194	13:16	29 57' 41.449	88 53' 08.3132	6.02	Yes	V000057.TXT
13BIM03_SVP016	7-13-2013	194	13:54:41	29 58' 26.9653	88 50' 53.4758	1.84	Yes	V000058.TXT
13BIM03_SVP017	7-13-2013	194	14:30	29 56' 20.4816	88 53' 12.9789	5.42	Yes	V000059.TXT
13BIM03_SVP018	7-13-2013	194	15:05:15	29 56' 38.9161	88 50' 28.5961	1.15	Yes	V000060.TXT
13BIM03_SVP019	7-13-2013	194	15:17:49	29 54' 32.1892	88 52' 54.3761	4.34	Yes	V000061.TXT
13BIM03_SVP020	7-13-2013	194	15:52:58	29 54' 35.3183	88 49' 50.6429	0.22	Yes	V000062.TXT
13BIM03_SVP021	7-13-2013	194	17:42:53	29 56' 52.1905	88 49' 10.0528	2.56	Yes	V000063.TXT
13BIM03_SVP022	7-13-2013	194	18:23:16	29 57' 16.2342	88 45' 51.8503	13.21	Yes	V000064.TXT
13BIM03_SVP023	7-13-2013	194	18:38:38	29 59' 43.1793	88 46' 41.5060	12.27	Yes	V000065.TXT
13BIM03_SVP024	7-13-2013	194	19:50:59	30 00' 39.9333	88 50' 34.3177	1.15	Y	V000066.TXT
13BIM03_SVP025	7-13-2013	194	21:23:20	30 03' 06.5597	88 54' 15.5823	6.78	Y	V000067.TXT
13BIM03_SVP026	7-13-2013	194	22:39:57	30 01' 29.5555	88 53' 06.7571	7.38	Y	V000068.TXT
13BIM03_27	7-14-2013	195	16:37:30	30 01' 02.3594	88 52' 49.2090	6.92	Y	
13BIM03_SVP28	7-14-2013	195	18:24:55	30 01' 57.1893	88 51' 43.5086	1.09	Y	
13BIM03_SVP29	7-14-2013	195	19:45:41	30 01' 33.3170	88 53' 08.4176	7.30	Y	

USGS SPCMSC Logsheet - Sound Velocity

USGS SPCMSC FAN#

13BIM03

UTM Zone = 16N

Time Zone = Central

DATA LOG EXPRESS

[illegible]

SPCMSC FAN # 13BIM03

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DOY	UTC Time	Line #	Hypack Line Name	Odom Waveform File	SOS Profile Name or Reading (m/s)	Bar Check (m)	Comments
192	-1339	1	001-NA339	NA	1530	NA	BAR = 0.973 m - Index = 0.100 SEE NOTES NOTE: ANT 4
193	-1339	1	002-1339	NA	SVP-001	-	G=176 P=4 / SPEED = 5.5 / RTK=RX CREW = BJ & NANCY / IN SYNC* RTK RECORDING INTERVAL
	1514				SVP-002		EOL
	1554	2	001-1554	NA	SVP-003	-	SOL
	1620						EOL - stop for SVP
	1624	3	001-1624	NA	SVP-004		SOL (continued)
	1705						EOL - Sounder set to 10m
	1716	4	001-1716	NA			SOL - so had to back-track.
	1723						Echo Power to 9
	1726				SVP-005		EOL
193	1745	5	002-1745	NA	SVP-006	-	SOL G=176 P=9
					SVP-007		EOL
193	1858	6	003-1858	NA	SVP-008	SOL	SHORELINE FROM START LINE 3, HEADING S. ON EASTERN SHORELINE
							PWR → 3
193	1925		NA		SVP-009		EOL - TEST RTK CHANNEL 1 NOT RECEIVING!

SPCMSC FAN #							Page <u>2</u> of <u> </u>
DOY	UTC Time	Line #	Hypack Line Name	Odom Waveform File	SOS Profile Name or Reading (m/s)	Bar Check (m)	Comments
193	19:31	7	004-1931	n/a	-	-	SOL - Contigue Shoreline → S
193	19:52						EOL - Grounded on sandbar
193	19:54	8	005-1954	n/a	-	-	SOL - Contigue Shoreline → S
193	20:04	9		NA			EOL
193	20:05	-	-	-	-	-	Testing channel #1 for RTK from TMRK
193	20:09:31	10	-	-	SVP0010	-	CAST!! RTK TMRK FIXED!!!
193	20:13:00	10	006-2013	-			Shoreline continued south - SOL
193	*NOTE: TMRK RADIO WAS ON CHANNEL 2 UNTIL NOW - MAY HAVE BEEN GETTING IT?? NOTE*						
193	21:16	-					EOL 20 Branch @ Island of Line #6
193	21:16:59	-	-	-	SVP011	-	SVP011
193	21:20:26		005				SOL Wrong Line - short delete
193	21:21	11	006-2121	NA	SVP		SOL
193	21:58	-	-		SVP012		EOL
193	22:25				SVP012		CAST
193		12	00 -	NA - BIN file	* - - -		SOL
193	23:06	-	-	-	-	-	EOL EODay
194	13:19		START OF DAY		SVP015	-	CAST
194	13:21	13	003-1321	BIN file		-	SOL Line file TVpriority 2
194	13:49	-					EOL

* Note Hypack ODOM CV Drive recorded BIN files for all the RAW files.

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DOY	UTC Time	Line #	Hypack Line Name	Odom Waveform File	SOS Profile Name or Reading (m/s)	Bar Check (m)	Comments
194		14	004	BIN file	SVP_016	-	CAST Run to next line
194	14:30	-			SVP_017	-	CAST Run to next
194	14:33	14	004-1433	BIN file	-	-	SOL 4 back side
194	15:01	-	-	-	-	-	EOL
194	15:05	-	-	-	SVP_018	-	CAST - Heading to Line 5
194	15:17:00	-	-	-	SVP_019	-	CAST
194	15:19:00	15	005-1519	BIN	-	-	SOL
194	15:52:00	-	-	-	-	-	EOL
194	15:53					-	CAST heading to Line 6
194	16:14	16	006-1614	-	-	-	SOL - around island to start of 6 -
-	-	-	11	-	-	-	Continued logging
194	-	-	4	-	-	-	tried P=7 to eliminate 2 dropouts - put
194			EOL 6				power back to 4 seems to correct the prob.
194	16:48	17	005-1648	-	SVP_020	-	crop line - Don't use - heading
194	18:25						around south side to front
			004		SVP_024		CAST Front side
194		18	004	BIM	-	-	SOL Line 4 front side
194	18:23	-					EOL
194	18:23	-			SVP_022		CAST SVP_021 Head to Line 3
194	18:38	14	003	-	SVP_023		CAST

<u>DOY</u>	<u>UTC Time</u>	<u>Line #</u>	<u>Hypack Line Name</u>	<u>Odom Waveform File</u>	<u>SOS Profile Name or Reading (m/s)</u>	<u>Bar Check (m)</u>	<u>Comments</u>
194	18:40	19	003-1840	BIN	-	-	SOL Line 3
194	19:16	-	-	-	-	-	EOL
194	19:16	20	002-1916	BIN	-	-	Shoalme from Lin 3 North
194		"		"	-		Power back to #6
194		"		"		-	EOL
194	19:50				SVP 024	-	CAST
194	19:54	21	001-1954	BIN	"	-	SOL shoaline continued
194	20:14	22	0167-2014	BIN	-	-	STARTING Priority Lines #2 #67
194	20:55	"	"	"	-	-	EOL
194	20:57	23	066-2057	BW			SOL Line 66 West
194	21:23						EOL
194	21:23				SVP-25	"	SO CAST
194	21:25	24	065-2125	BIN			SOL Line 65 EAST
194	21:45						EOL
194	21:48	25	068-2148	BIN	-	-	SOL 68 taking South/storms to North
194	22:16	2					Choppy - going South
194	22:17	-	-		SVP-026		CAST EOL 68 b/c shallows
194	22:22	26	030-2222				Line 22 heading west
194	22:	n	n				EOL
END OF DAY							

SPCMSC FAN #

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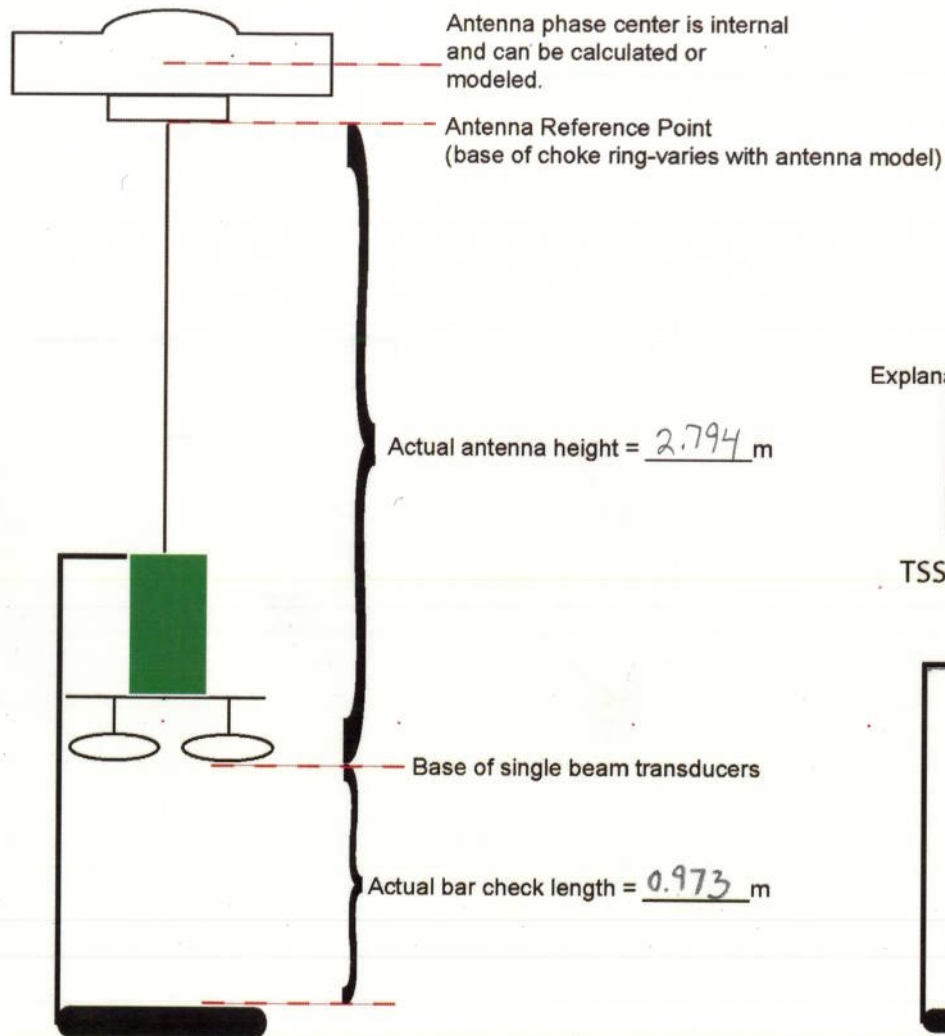
DOY	UTC Time	Line #	Hypack Line Name	Odom Waveform File	SOS Profile Name or Reading (m/s)	Bar Check (m)	Comments
195	15:57	19	019-1557	BIN			Beginning with SB Priority 2 line 19
"	16:17	20	020-1617	"	13BIN03 SVP27		need to hit line 18+1 same bin
"	16:41	21	021-1641	"	13		* took SVP at end of line 20
"	17:01	22	022-1701	"			
"	17:28	23	023-1728	"			
"	17:49	24	024-1749	"			
"		25	025-	"			
"	18:29	26	026-1829	"	13BIN03 SVP028		
"	18:45	27	027-1845	"			
"	19:01	28	028-1901	"			
"	19:15	29	029-1915	"			
"	19:30	30	030-1930	"	13BIN03 SVP30		^{SVP} Cast @ end of line 30
"	19:48	31	031-1948	"			
"	20:04	32	032-2004	"			
195	20:19	33	033-2019	"			
"	20:41	34	034-2041	"			
195	21:24	35	035-2124	"			Picked up Tuba on the Shark bait
195	21:46	37	037-2146	"			Tuba Jaw - odd lines
"	22:09	39	039-2209	"	13BIN03 SVP51		Shark bait - even lines
							SVP Cast middle of line 39

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DOY	UTC Time	Line #	Hypack Line Name	Odom Waveform File	SOS Profile Name or Reading (m/s)	Bar Check (m)	Comments
195	22:35	41	041-2235	BIM			Continuation of SB Priority 2
195		43	043-22				
195	23:31	45	045-2331				
	EOD						
196	14:10	040	040-1410				Pwr-4 Gain -176 Starting with the
196	14:26	036	036-1426	change gain to 136			southern most SB priority 3 lines
"	14:45	032	032-1445		SVP-032		heading north. Jappa Saw +
"	14:56	028	028-1456				Jet ski together doing every other
"	15:12	024	024-1512				line.
196	15:28	54 020	020-1528	BIM			SOL
	15:42	53 016	016-1542	"	-	-	
	16:04	56 012	012-1604		-	-	
	16:18	57 008	008-1618				
	16:42	58 007	007-1642				Begin doing every line w/ ski
	16:54	59 005	005-1654				Trace odds / Wdr evens (start)
	17:07	60 003	003-1707				
	17:21	61 001	001-1721				
	17:57	62 148	148-1757				Outside crossing line heading
		63 147	147-1848				south

[illegible]



Explanation



TSS Housing

13BIM03 BAR CHECK

Interval program in 000m echart

SVP Measurement = 1530 m/s File = V000037.txt

In echart: ~~Deepest planned~~

- Deepest planned bar check = 3m

- SVP = 1530 m/s

- Draft = 0.00

Measured bar check 0.973m

Index frequency value = 0.100 ^{NO UNITS} to obtain 0.973m.

Settings

Channel 1 frequency = 200

Pulse Width = 30

TVG curves = 10log

TVG STAT = 0.25

Threshold = 10%

Min Gate = 10%

Bar Check

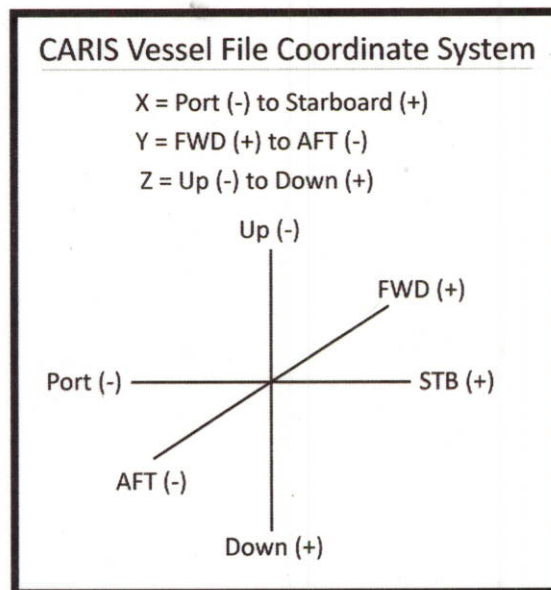
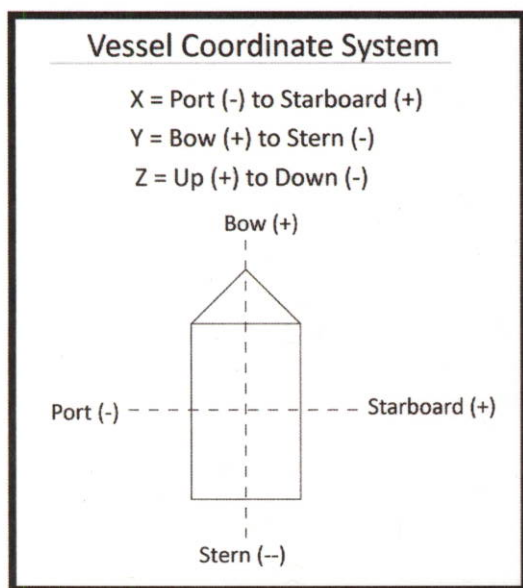
1.601m

13BIM03

USGS SPCMSC - RV Jabba Jaw Offsets - 2012

Vessel Diagram for Single Beam Instrument Offsets

These offsets can be used in HYPACK, the CARIS vessel file and the CARIS TPU offsets within the vessel file. Refer to the diagrams for CARIS program orientation and the last page for CARIS TPU values.



NOTES: USING RTK NAVIGATION

* Ashtech on boat
- NO input of antenna height during acquisition.

* ProFlex @ BSES → USED Antenna Model selection w/in ProFlex survey setup page. Inserted antenna height here.

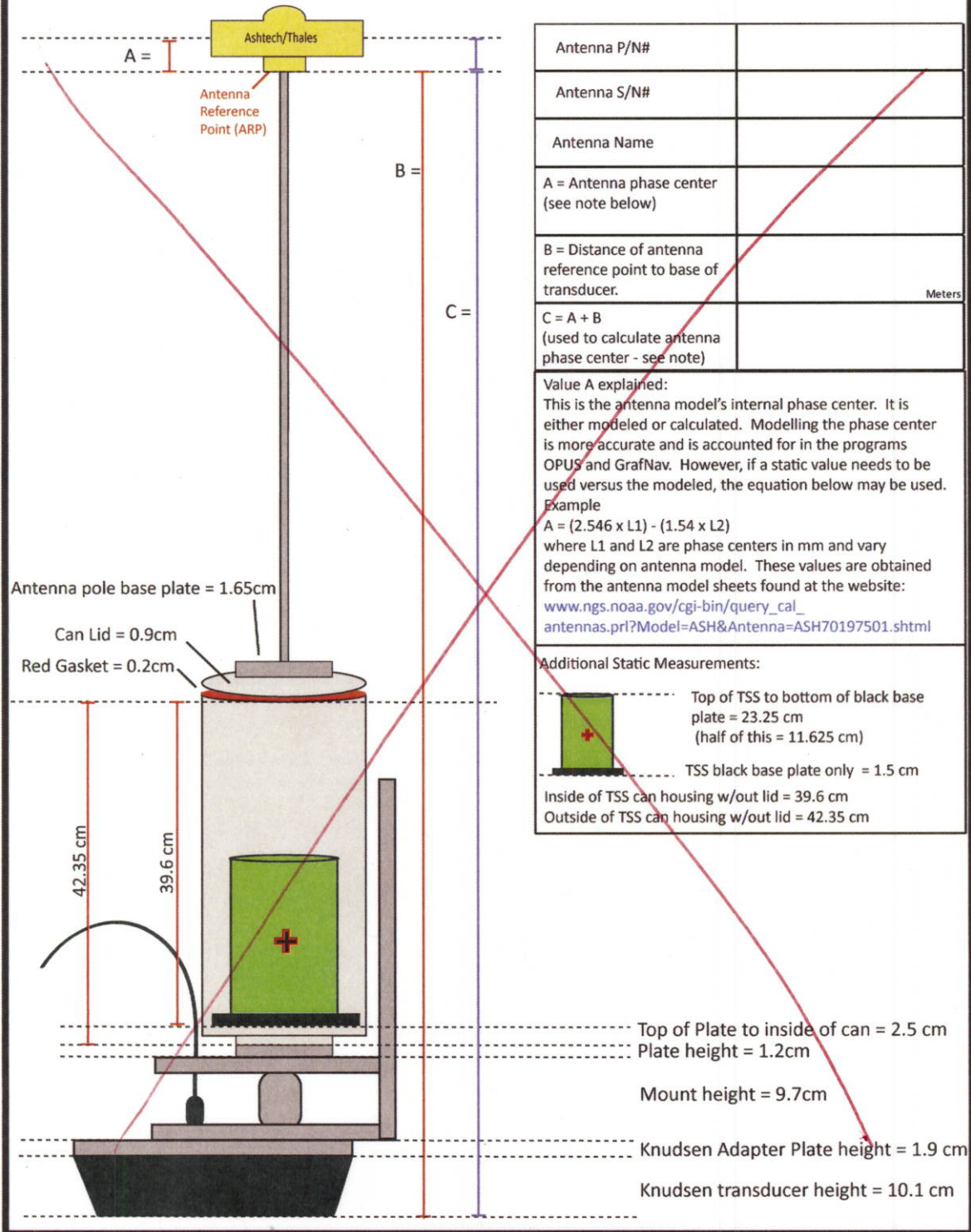
So (Ant. height + Ant. model) → NOT have to account for in Post processing

Digital Photographs R/V Jabba Jaw with Knudsen Mount

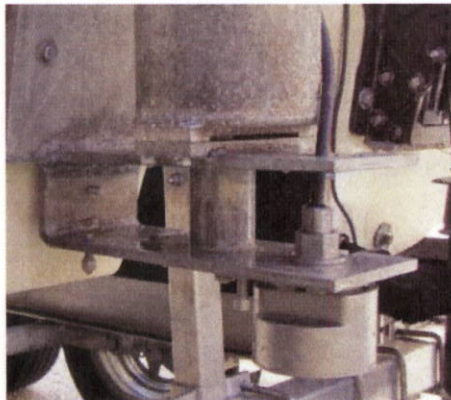
NOT USE Knudsen



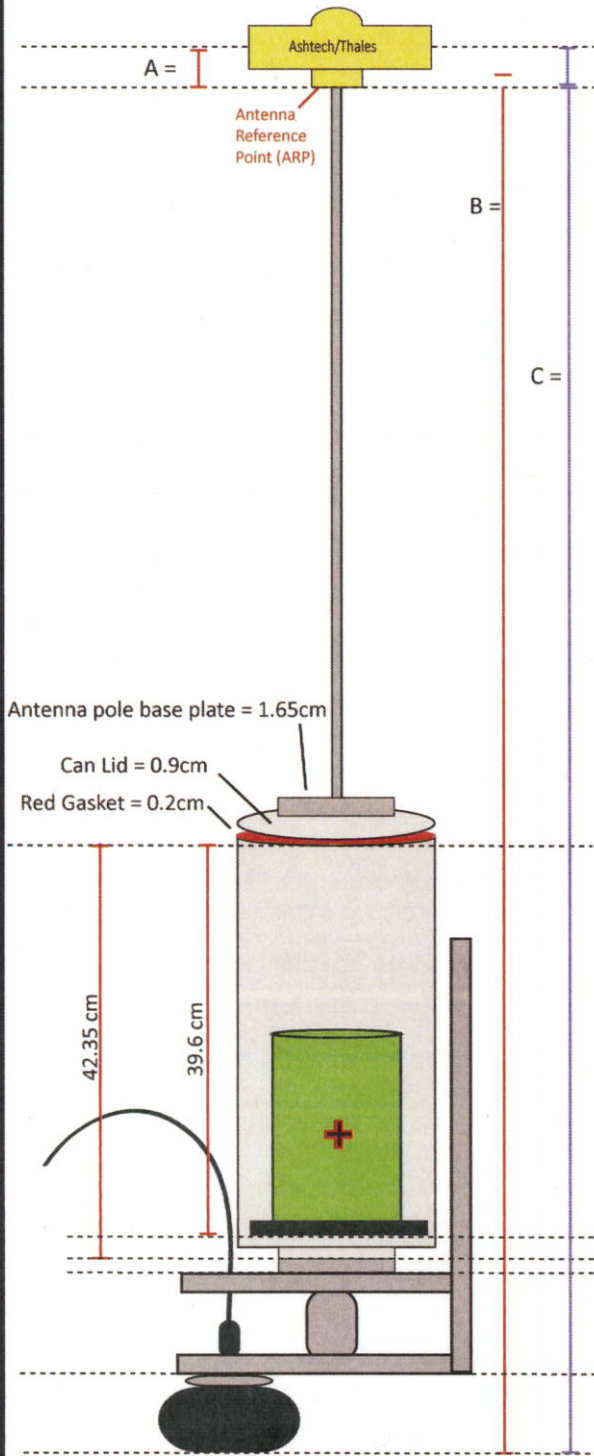
Z Offset for the Ashtech Antenna - Knudsen Mount

~~* NOT USE Knudsen*~~

Digital Photographs *R/V Jabba Jaw* with Odom Mount



Z Offset for the Ashtech Antenna - Odom Mount



Antenna P/N#	701945-02 RVE
Antenna S/N#	CL6200548008
Antenna Name	choke-ring
A = Antenna phase center (see note below)	0.047 m
B = Distance of antenna reference point to base of transducer.	2.794 m
C = A + B (used to calculate antenna phase center - see note)	2.841 m

Value A explained:

This is the antenna model's internal phase center. It is either modeled or calculated. Modelling the phase center is more accurate and is accounted for in the programs OPUS and GrafNav. However, if a static value needs to be used versus the modeled, the equation below may be used.

Example

$$A = (2.546 \times L1) - (1.54 \times L2)$$

where L1 and L2 are phase centers in mm and vary depending on antenna model. These values are obtained from the antenna model sheets found at the website:

www.ngs.noaa.gov/cgi-bin/query_cal_antennas.pl?Model=ASH&Antenna=ASH70197501.shtml

Additional Static Measurements:



Top of TSS to bottom of black base plate = 23.25 cm
(half of this = 11.625 cm)

TSS black base plate only = 1.5 cm

Inside of TSS can housing w/out lid = 39.6 cm

Outside of TSS can housing w/out lid = 42.35 cm

Ant. phase center Equation

$$L1 = 90.5 \text{ mm}$$

$$L2 = 119.0 \text{ mm}$$

$$A = (230.413) - (183.26) = 47.153 \text{ mm} = 0.0471 \text{ m}$$

Top of Plate to inside of can = 2.5 cm

Plate height = 1.2cm

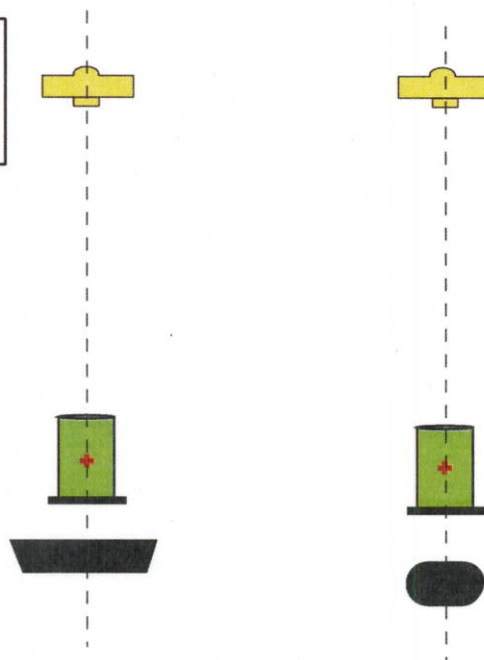
Mount height = 9.7cm

Odom washer height = 1.1cm

Odom transducer height = 6.7cm

X Offsets = Port to Starboard

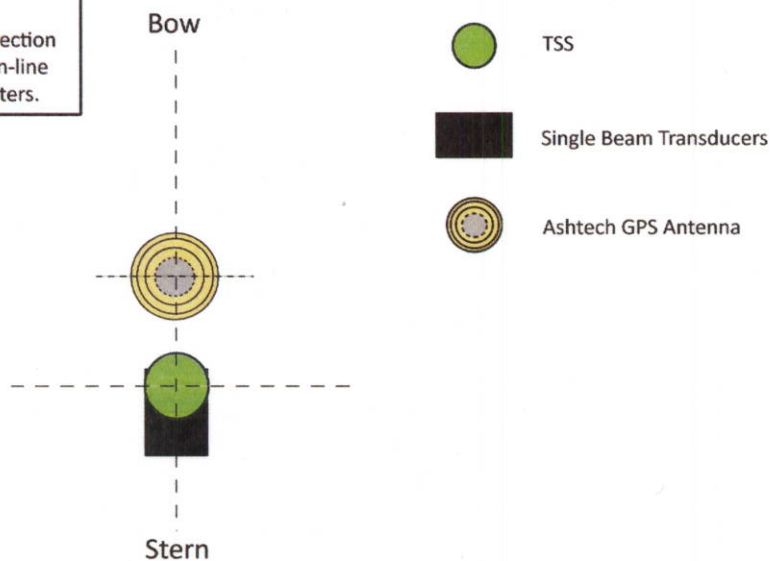
As of 11/2012 the *RV Jabba Jaw* offsets have not been surveyed in with the geodimeter. The offsets in the X direction are considered negligible with the in-line sensor configuration. Use 0.000 meters.



Y Offsets = Bow Stern

Note: This illustration is greatly exaggerated for visual clarification

As of 11/2012 the *RV Jabba Jaw* offsets have not been surveyed in with the geodimeter. The offsets in the Y direction are considered negligible with the in-line sensor configuration. Use 0.000 meters.



SOP - 2012 - RV Jabba Jaw Offsets

CARIS Vessel File Offsets - Signs are according to CARIS orientation		
TPU Offsets	Knudsen Mount	Odom Mount
MRU to Trans X(m)	0.0000	0.0000
MRU to Trans2 X(m)	0.0000	0.0000
MRU to Trans Y(m)	0.0000	0.0000
MRU to Trans2 Y(m)	0.0000	0.0000
MRU to Trans Z(m)	-0.37025	-0.32825 ✓
MRU to Trans2 Z(m)	0.0000	0.0000
Nav to Trans X(m)	0.0000	0.0000
Nav to Trans2 X(m)	0.0000	0.0000
Nav to Trans Y(m)	0.0000	0.0000
Nav to Trans2 Y(m)	0.0000	0.0000
Nav to Trans Z(m)	-2.845 (or similar)	-2.802 (or similar)
Nav to Trans2 Z(m)	0.0000	0.0000
Trans Roll (deg)	0.0000	0.0000
Trans Roll 2 (deg)	0.0000	0.0000

Notes:

-Enter four digits into CARIS vessel file and let the computer round off.

-Quote from CARIS Manual pg. 53:

"Sensor positions are described using X-Y-Z axis coordinates relative to a Reference Point (RP). The RP is a location from which all other positions are derived. (Imagine standing at the location of the Reference Position and describing how far and in what direction the sensor is away from you.)"

The antenna heights should be similar to these heights, but may differ in mm or cm depending on antenna type. Also sometimes a nut is needed to keep the antenna snug on the pole which may alter the final height.

TPU StdDev	Knudsen Mount	Odom Mount
Motion Gyro (deg)	0.0000	0.0000
Heave % Amp	5.0000	5.0000 ✓
Heave (m)	0.0500	0.0500
Roll (deg)	0.0400	0.0400
Pitch deg)	0.0400	0.0400
Position Nav (m)	0.5900	0.5900 0.0000
Timing Trans (s)	0.0000	0.0000
Nav Timing (s)	0.0000	0.0000
Gyro Timing (s)	0.0000	0.0000
Heave Timing (s)	0.0000	0.0000
Pitch Timing (s)	0.0000	0.0000
Roll Timing (s)	0.0000	0.0000
Offset X (m)	0.0000	0.0000
Offset Y (m)	0.0000	0.0000
Offset Z (m)	0.0000	0.0000
Vessel Speed (m/s)	3.0000	0.0000
Loading (m)	0.0000	0.0000
Draft (m)	0.0000	0.0000
Delta Draft (m)	0.0000	0.0000
MRU Align Std Dev gyro	0.0000	0.0000
MRU Align Std Dev Roll/Pitch	0.0000	0.0000
Comments	null	null

For 13BIM03

RTK using -2.841

* -2.841 accounts for the the antenna height plus the interval antenna phase center.

If Post Processed, USED then use value: -2.794 Navigation

Example 1:

MRU to Trans X(m) can be read as Transducer 1 is located in the X direction (port or starboard) from the MRU by # of meters.

Answer:

Transducer 1 is port of the MRU by 0.0880 m. Port is negative in CARIS so it is -0.0880 m.

Example 2:

MRU to Trans2 X(m) can be read as Transducer 2 is located in the X direction (port or starboard) from the MRU by # of meters.

Answer:

Transducer 2 is starboard of the MRU by 0.0880 m. Starboard is positive in CARIS so it is 0.0880 m.