

Sentry Upgrades Battery Upgrade

- All new 1atm batteries – new chemistry
- All new Ceramic Housing
 - Old one had 300 dives = time to check
 - Old one inspected serviced and ready to use again in the future
- 2x The total power
 - Upgraded charging means similar turn around times
 - ~25 - 28 hour multibeam missions with 90 – 100km of track line
 - ~55+ hour photo missions with ~125km track line





Sentry Upgrades Propulsion & Control



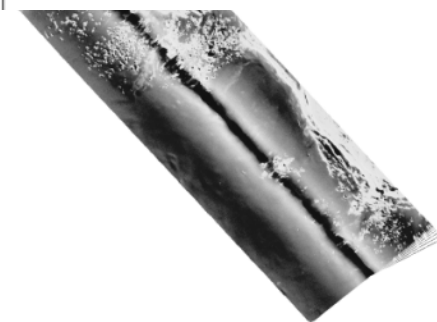
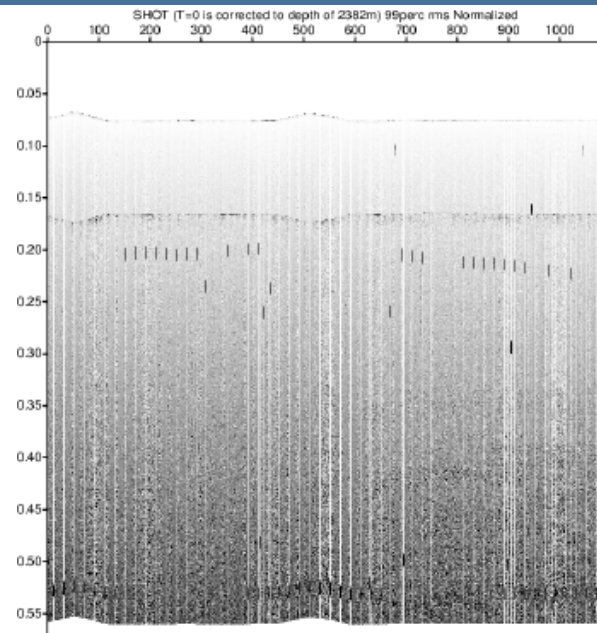
- Changing to counter-rotating props – will reduce “prop walk” → 5-10% increase in propulsion efficiency and hence range
- Increasing max current to thrusters by 20%. Estimated to increase vehicle top speed to ~2.5knts
- New wing servo design finally underway. Largest remaining mechanical failure on vehicle



Sentry Upgrades Data Pipelines



- MB system sub-bottom pipeline fully online and highly automated.
 - Includes navigated segy files
- MB system Sidescan tool undergoing some re-work
- New Multibeam tool makes process even more highly automated.
 - Does not change the need for additional processing for “publication quality”
- Mosaicing pipeline now working well for “flat” areas
 - Planning to use on dives of opportunity on next two cruises, then perhaps offer on a time available basis as standard.
- Photos can now be copied and processed at a rate of ~ 5,000 per hour – approximately 10x improvement



Sentry Upgrades Metadata



- New Scripts configure and read all possible data from instruments (e.g serial num, cal constants, etc)
- All responses logged
- Logs parsed by post processing
- Table created for dive report.
- Should be in every dive report by end of year for some sensors.
- Remaining sensors to be implemented next year.

Instrument	Model	Serial Num.	Comments	Config File
USBL	Sonardyne AvTrak2			avtrak_20160423_1925.cfg
DVL	RDI Navigator (300kHz)	727-2000-00J	CX: 1, WP: 0	dv1300_20160423_1926.cfg
Magnetometer	APS 1540	0689		aps1540_0_20160423_1926.cfg
	APS 1540	0688		aps1540_1_20160423_1927.cfg
	APS 1540	0690		aps1540_2_20160423_1927.cfg
CTD	SBE 49	222		sbe49_20160423_1927.cfg
SAIL	eh A/D	11	A: 2, G: 1.00, O: 0.0016	a2d2-pods_20160423_1926.cfg
	obs A/D	14	A: 5, G: 1.00, O: 0.0018	
	Timing			tim_20160423_1931.cfg



Sentry Upgrades Dynamic Focus Sidescan



Sentry Upgrades Misc



- New smaller A/2 replaces unsupportable system from ABE
- 50lbs new payload from partial new foam and removal/upgrade of old equipment
- Closed loop on deck chilling system