

ABE/Sentry Update

May 30, 2007

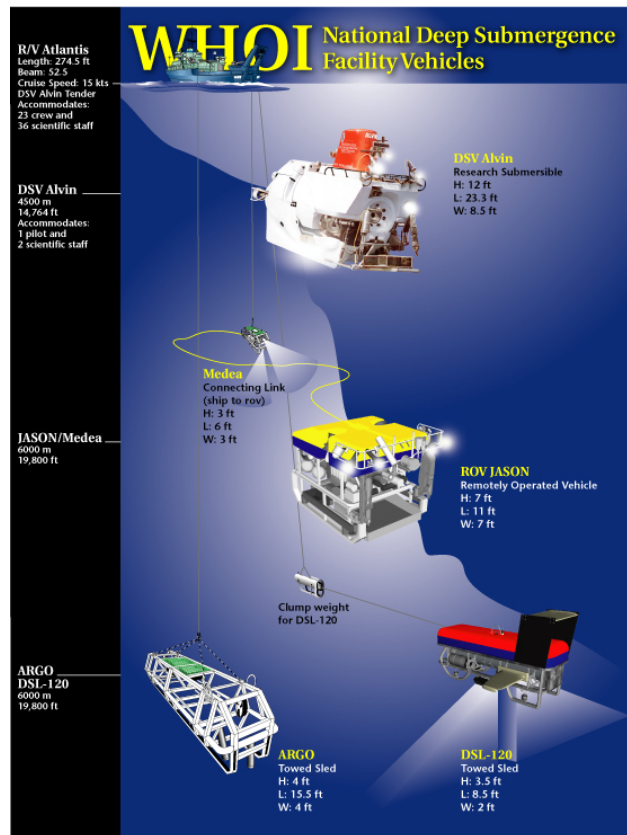


Dana Yoerger
Robert Brown
Rod Catanach
Chris German



ABE/Sentry Update

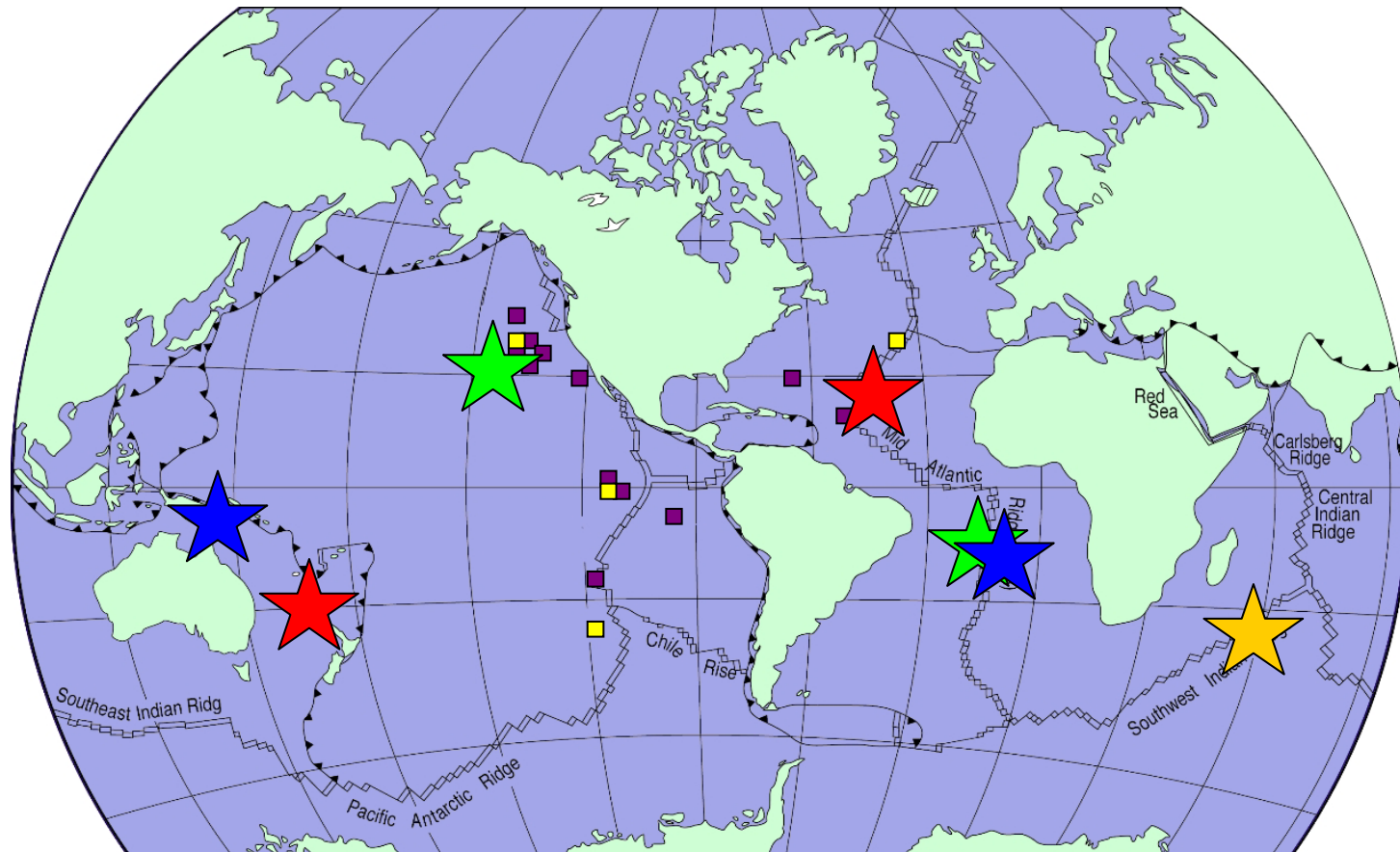
Sentry trials scheduled (Sep 2007), ready to enter NDSF in 2008
Meanwhile, ABE has passed Dive #200



ABE/Sentry Update

DESSC
May 2007

ABE dives to date: 202, >3000 km bottom tracks, >1500 hrs



ABE/Sentry Update

Expedition 115-19(II)

Search for Hydrothermal Vents on the Southwest Indian Ridge

- First active vent discovery on the Southwest Indian Ridge
- First active vent discovery on an ultra-slow spreading ridge

Cruise sponsored by COMRA

Chief Scientist: Chunhui Tao

Jian Lin

Chris German

Dana Yoerger

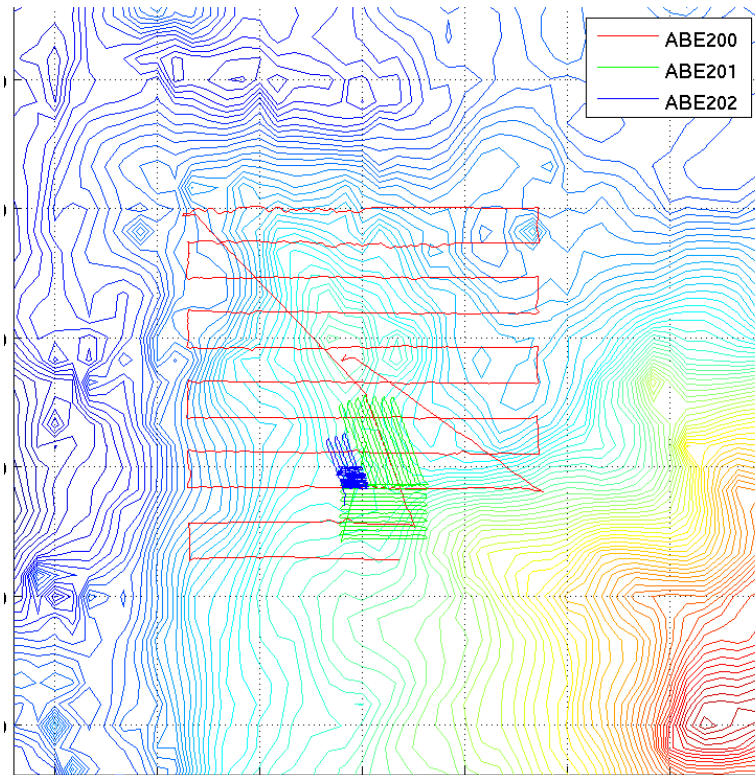
Alan Duester

Andy Billings



ABE/Sentry Update

Expedition 115-19(II)

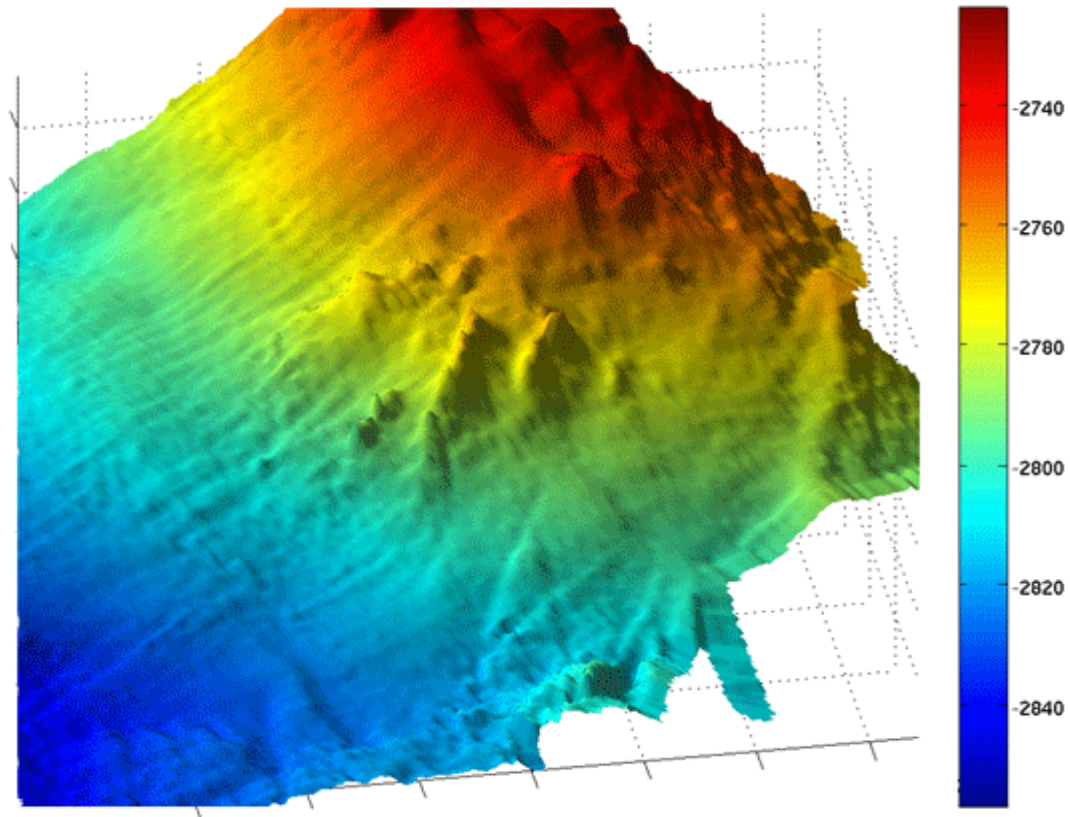


- 3-phase plume search/survey technique successful
- Remaining dives lost to weather

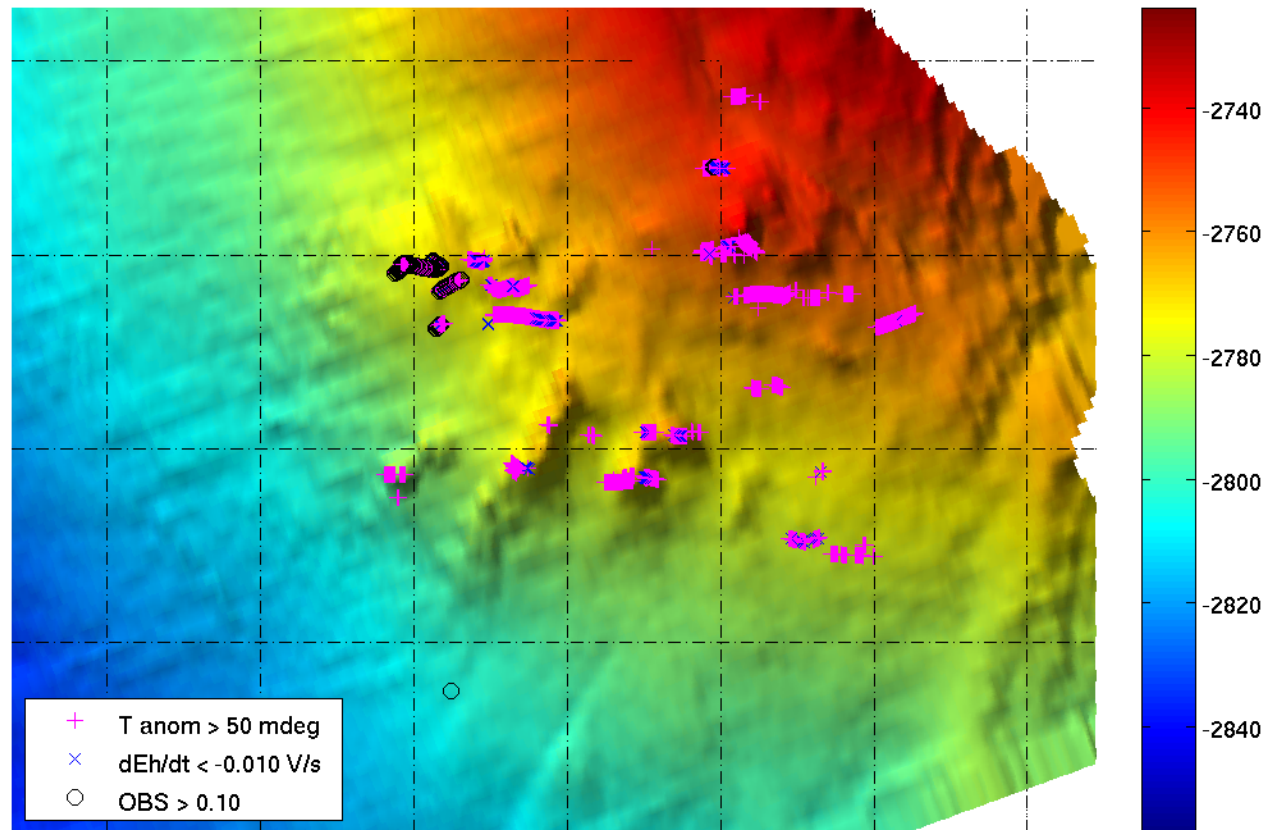


ABE/Sentry Update Expedition 115-19(II)

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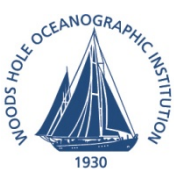
ABE/Sentry Update Expedition 115-19(II)



All vent structures showed evidence of venting



ABE/Sentry Update Expedition 115-19(II)



ABE/Sentry Update Expedition 115-19(II)



Science party used *ABE* map and TV grab to recover samples from active smokers



Sentry Development

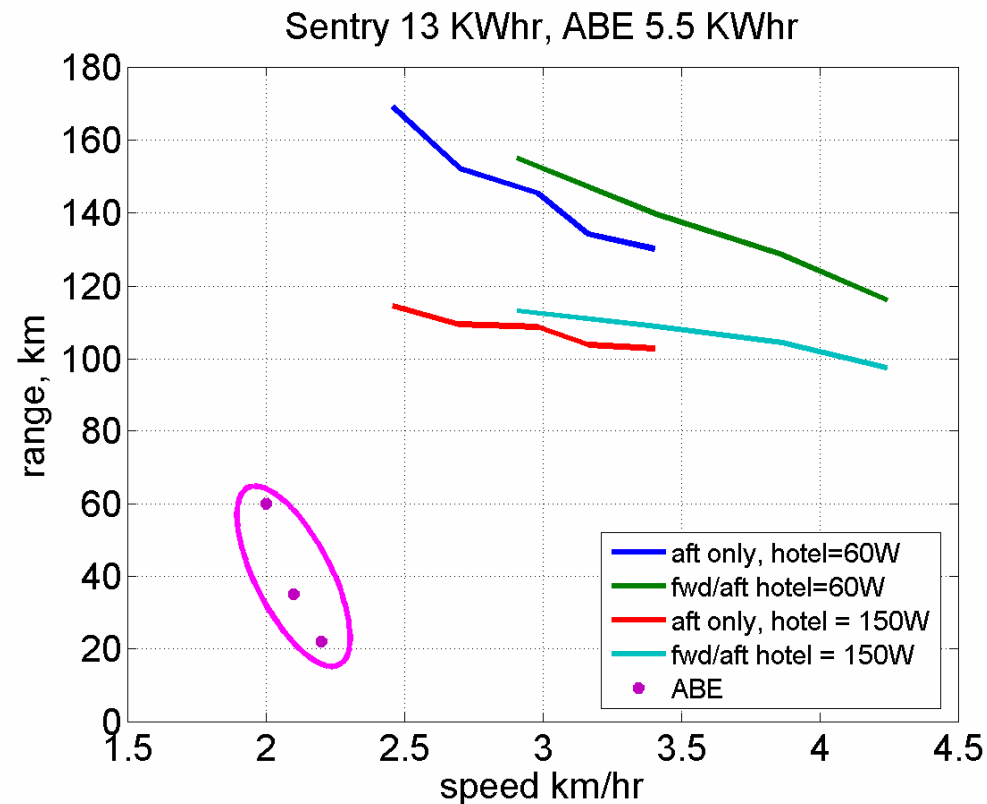
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Upgraded Elements

- New batteries (Nereus packs)
- Multibeam sonar (Reson 7125)
- New frame, weight droppers/anchor system
- PHINS inertial nav
- New CT sensor
- New camera/LED strobe
- Dual magnetometers
- Instrument bay (Tethys mass spec as placeholder)



Update on *Sentry* Range

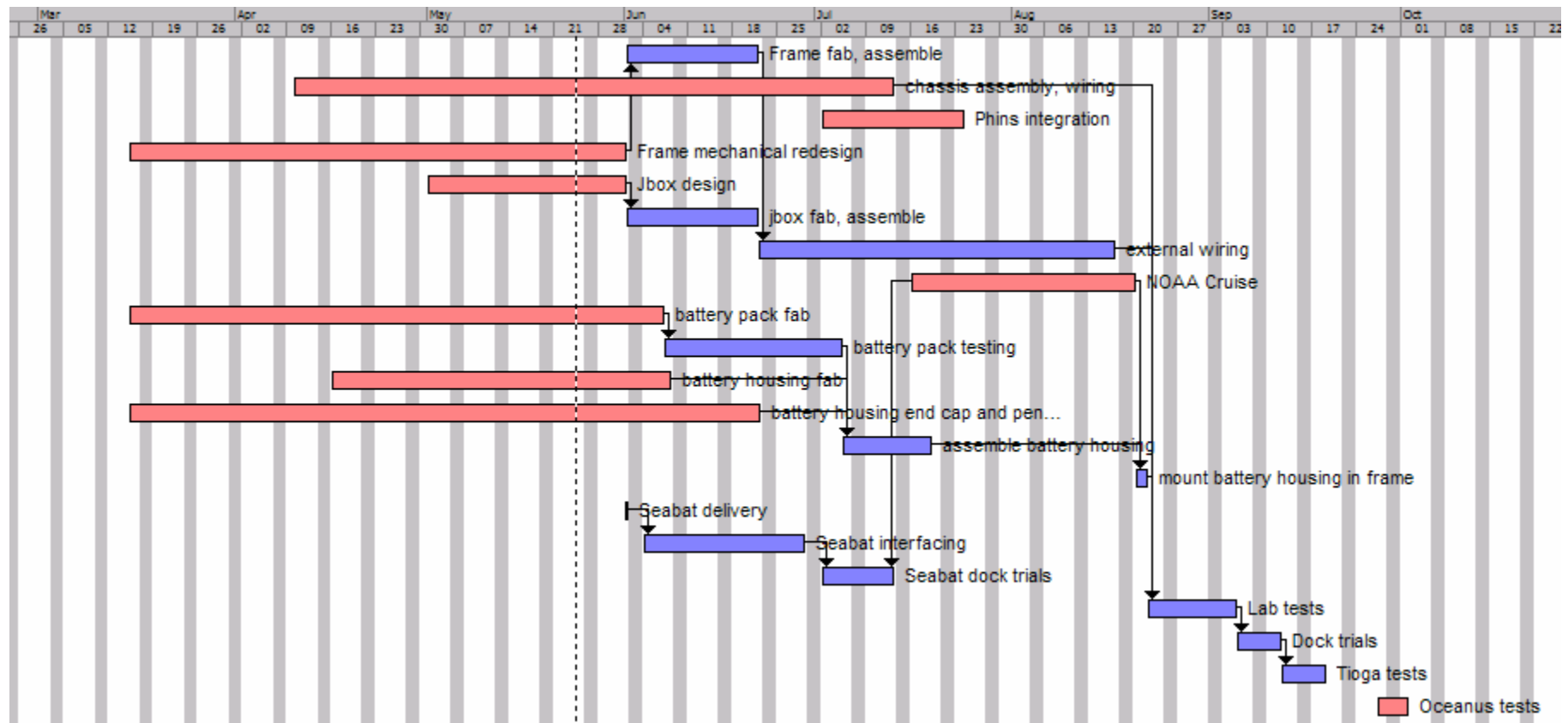


1. Battery capacity upgraded to 13 KWH
2. Reson 1725 power higher than anticipated (100W)



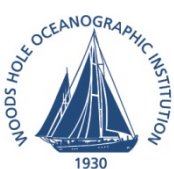
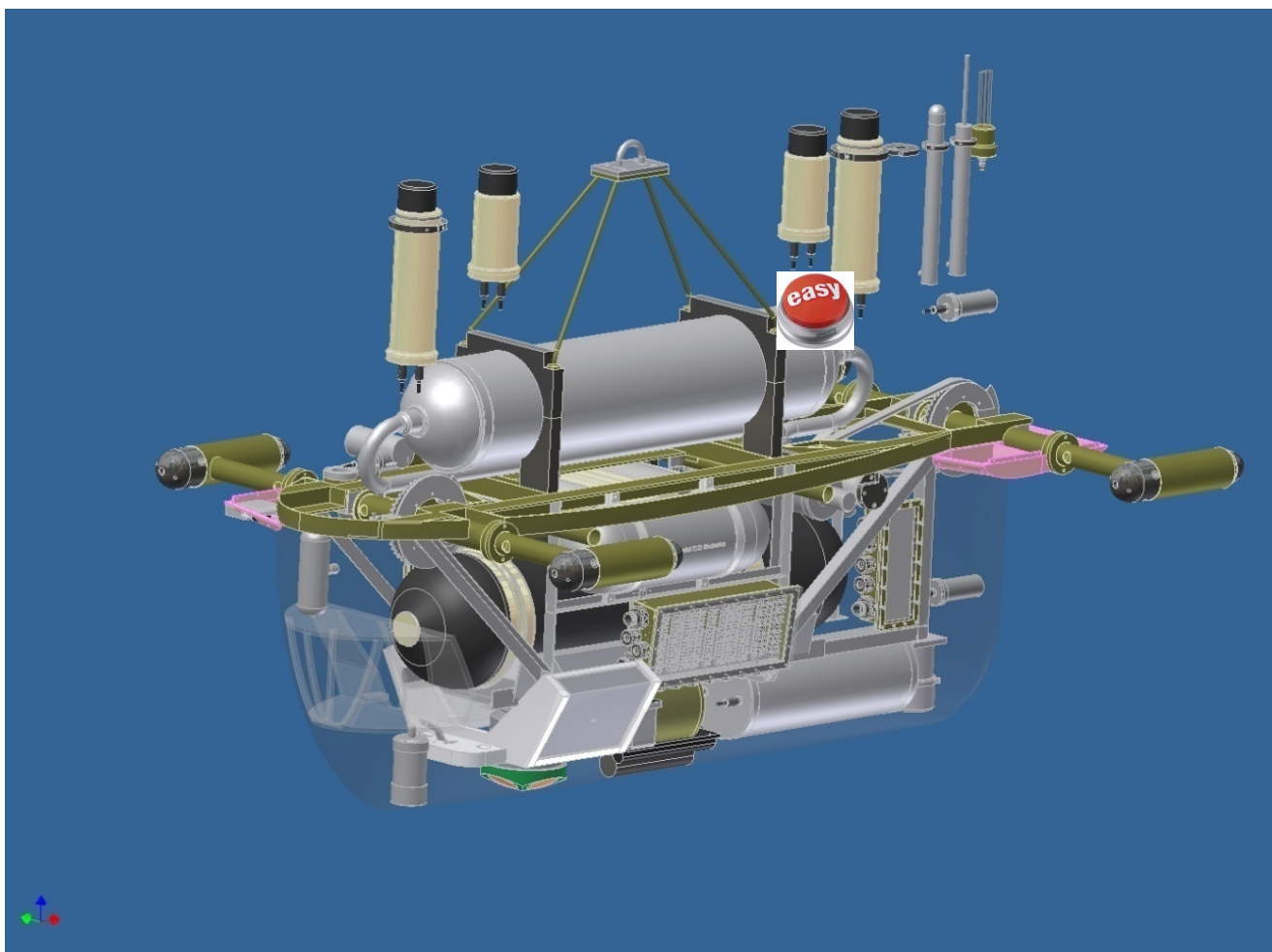
Sentry Development Timeline

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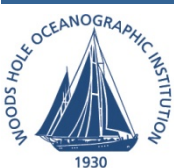
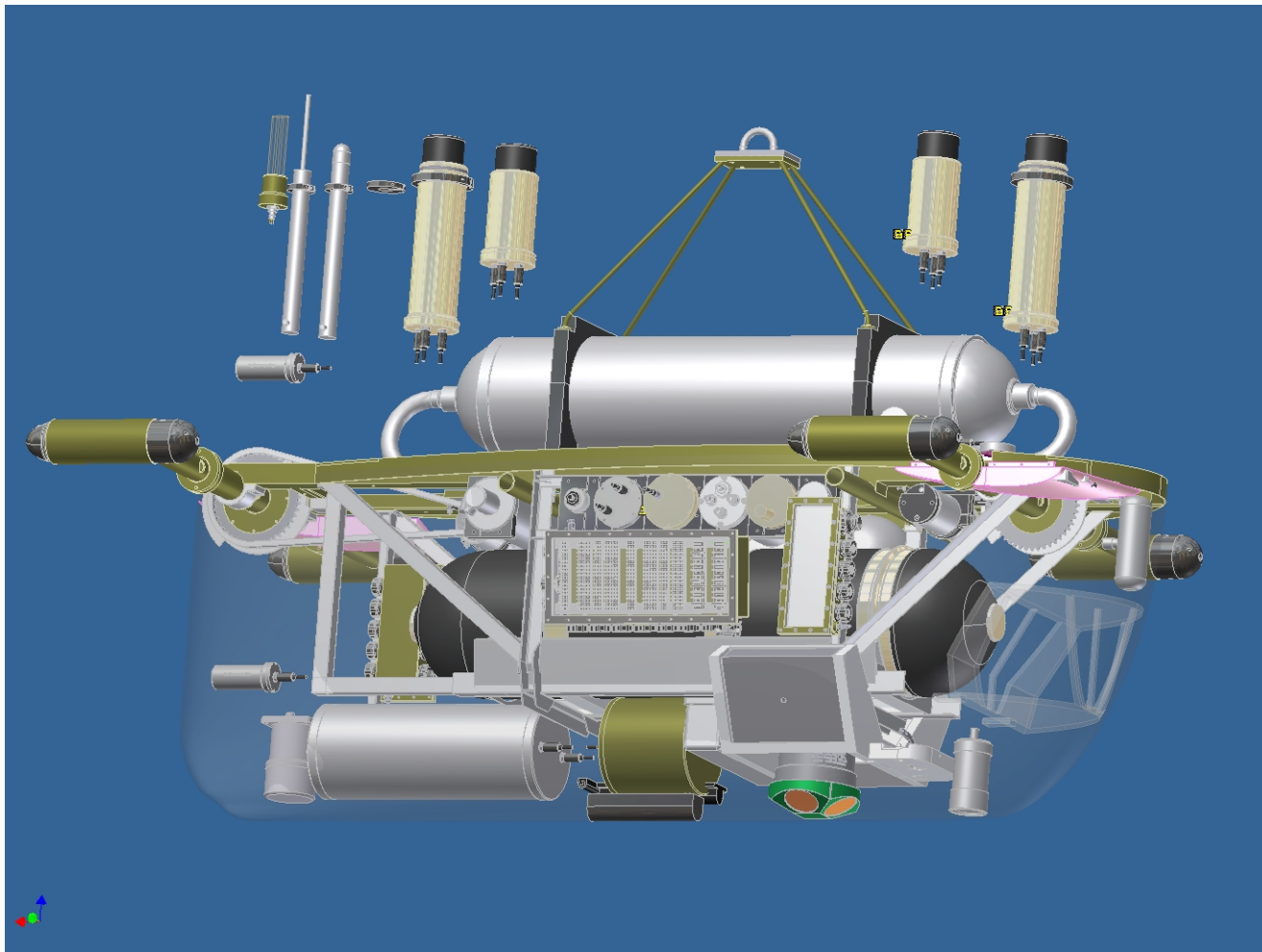
Sentry Mechanical Overview

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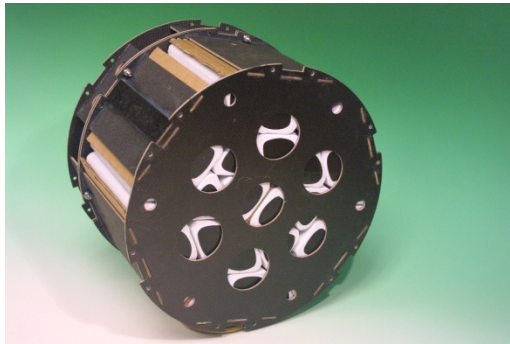


Sentry Mechanical Overview

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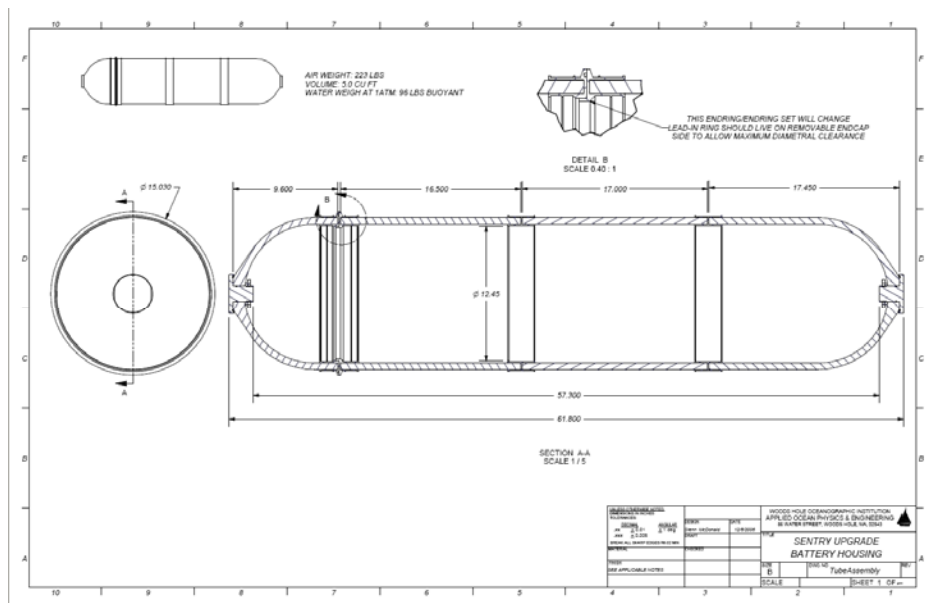


Sentry Battery Packs



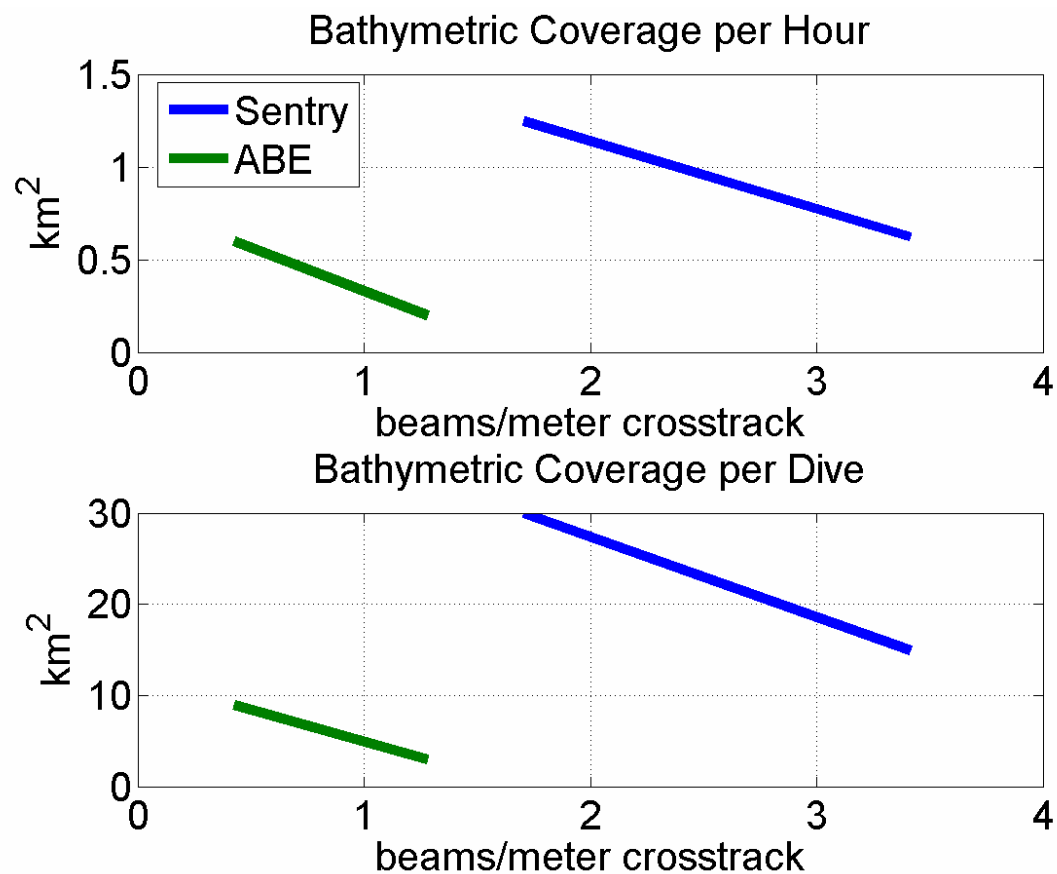
Sentry packs utilize 5 HROV packs and housings with some changes:

1. Ceramic endcap
2. Penetrator design
3. Internal structure to support 5 packs
4. ~13KWH capacity



Reson 7125 Multibeam

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Schmitt/Pettit CT Sensor, Optical Backscatter, and Eh Probe in Wing Root

