Potential Fields Pool Equipment (PFPE)

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PFPE - Information

- Information on the pool gravimeters is located on the MISO website (Google ‘PFPE WHOI’) 
  http://www.whoi.edu/page.do?pid=49995
PFPE – Resources

- UNOLS Pool BGM-3 gravimeters
- Land Gravimeters for ties
- Gravimeter spares and equipment
- A SeaSPY towed marine magnetometer available for community use
Pool Gravimeters

- In addition to providing permanent gravimeters and technical support to 6 UNOLS vessels, there are 2 pool BGM-3 gravimeters.
- Pool gravimeters are not permanently installed on a ship and are available for use on any ship of opportunity.
- Since 2007, these pool gravimeters have been used in the Red Sea, Guaymas Basin, Galapagos Spreading Center, Puget Sound, and the Arctic on both US and non-US ships (Canadian Coast Guard).

PFPE – Status and Goals

• PFPE 5-year facility grant funded in 2011 through NSF
  – Kinsey is lead PI, transitioning management of PFPE from Fornari to Kinsey well underway

• PFPE provides the UNOLS community with:
  – A supply of spares for maintaining the at-sea BGM-3s
    • Repair or refurbish sensors as necessary
  – Technical Support including on-shore support for the at-sea gravimeters and helping establish best practices.
  – Two pool gravimeters for use of ships of opportunity or as complete emergency spares for the at-sea systems.

• PFPE does NOT post-process or archive marine gravity data
  – Such efforts are better suited toward other researchers or community initiatives.
PFPE – Technical Support - 2012

• 24/7 on-shore technical support from Kinsey and Herr and helping establish best practices and streamlining reporting functions from at-sea technical groups on the ship back to PFPE and for distribution to the community.

• Working with UNOLS vessel operators to schedule visits for maintenance, cruise preparation, and emergency repairs.

Left, emergency gravimeter shipment to the Langseth; Right, Melville in Valparaiso, Chile in February 2010.
PFPE – 2012 Planned Efforts

• Working with the gyroscope manufacturer – US Dynamics to repair/refurbish gyros.
• Monitoring the old LDEO BGM-3 gravimeter at WHOI and planning to return the unit to the Langseth in 2012.
• T. Thompson now has a fully operational BGM-3 gravimeter.

(PFPE currently providing towed magnetometer and gravimeter technical support for the Tomaniga-Tivey cruise - Fall 2011)
PFPE – 2012 Planned Efforts (cont’d.)

• Continue existing support services
• Work with the ship technicians to ensure gravimeters are calibrated and serviced as necessary
• In collaboration with the technicians and scientists:
  – Establish and document ‘Best Practices’
  – Work toward standardizing data formats and establishing at sea data quality control and reporting
  – Protocols for gravity ties and establishing database
• Coordinate these efforts with technicians, R2R, and researchers interested in developing tools for processing marine gravity
• Gaining access to NGA pool of BGM-3 spares & meters.
• Best Practices
  – Checklists for daily, weekly, and annual maintenance
  – Standardized gravity ties

• Continued Discussions with technical groups and revision of current ‘Best Practices draft & plans for distribution.