GEOTRACES SYSTEM UPDATE

• First voyage completed on Knorr in July 2008
• Design completed & modifications were made to Knorr in March 2009:
  – Stanchion added in Thruster Room to increase support to Trawl Crane Crutch
  – Strengthening of Trawl Crane Crutch
• Transition foundation between winch and deck designed & fabricated
• 2009 Voyage successfully completed in May
GEOTRACES SYSTEM UPDATE

• 2010 GEOTRACES scheduled for Oct on Knorr
• Over-boarding method being changed to a portable A-Frame packaged with the winch
• Design for all Global AGORs is complete
• Proposals were received 14 April, anticipate contract to be awarded week of 19 April
• Attempting to have the new over-boarding system available for October 2010 sailing date
Proposed Over-Boarding System

Karen Stamieszkin of the Provincetown Center for Coastal Studies, held at the ankles by Lee Reeve, leaned into the water to collect a zooplankton sample as Charles Mayo kept an eye out.
GEOTRACES Over-Boarding Layout
# Fleet Broadband Operating Project

<table>
<thead>
<tr>
<th>SHIP</th>
<th>Operating Status</th>
<th>SHIP</th>
<th>Operating Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantis</td>
<td>✓</td>
<td>Melville</td>
<td>✓</td>
</tr>
<tr>
<td>Knorr</td>
<td>✓</td>
<td>Revelle</td>
<td>✓</td>
</tr>
<tr>
<td>Oceanus</td>
<td>✓</td>
<td>New Horizon</td>
<td>✓</td>
</tr>
<tr>
<td>Sharp</td>
<td>✓</td>
<td>Sproul</td>
<td>✓</td>
</tr>
<tr>
<td>Cape Hatteras</td>
<td>✓</td>
<td>Endeavor</td>
<td>✓</td>
</tr>
<tr>
<td>Atlantic Explorer</td>
<td>✓</td>
<td>Thompson</td>
<td>✓</td>
</tr>
<tr>
<td>Wecoma</td>
<td>✓</td>
<td>Langseth</td>
<td>✓</td>
</tr>
<tr>
<td>Point Sur</td>
<td>✓</td>
<td>Walton Smith</td>
<td>✓</td>
</tr>
<tr>
<td>Palmer</td>
<td>✓</td>
<td>Savannah</td>
<td>Antenna Received but not installed</td>
</tr>
<tr>
<td>Gould</td>
<td>Antenna Received but not installed</td>
<td>Clifford Barnes</td>
<td>Antenna Received but not installed</td>
</tr>
</tbody>
</table>
Fleet Broadband Operating Project

- FBB Workshop held in Woods Hole May 2009
- New 3 Year Operating Program Implemented January 1, 2010:
  - Data bandwidth established at 480 Gigabytes per year @ $1.52/MB rate. This is use or lose for ea yr of agreement
  - Phone charges are in addition to fixed billing for data:
    - FBB to Fixed phone or other Inmarsat sys: $1.08/minute
    - FBB to cell: $1.32/minute
  - 2 Stage Calling Shore to Ship established to manage cost:
    - To Iridium: $1.94/minute vs. $9 to $12/minute
    - To FBB: $1.63/minute vs. $9 to $12/minute
Fleet Broadband Operating Project

• Need to integrate FBB System into operational use
• At this point, only 15 GB of the annual 480 GB pool has been used
• Used 3% over 25% of year
• 2\textsuperscript{nd} & 3\textsuperscript{rd} Quarter will be key period of usage
• Focus on getting last 3 systems installed
• Recent activity to increase use:
  • Integrating FBB System into shipboard networks
  • Converting all voice calls through data ports VoIP