ADCP's in the UNOLS Fleet

An Open Discussion

Moss Landing Marine Labs

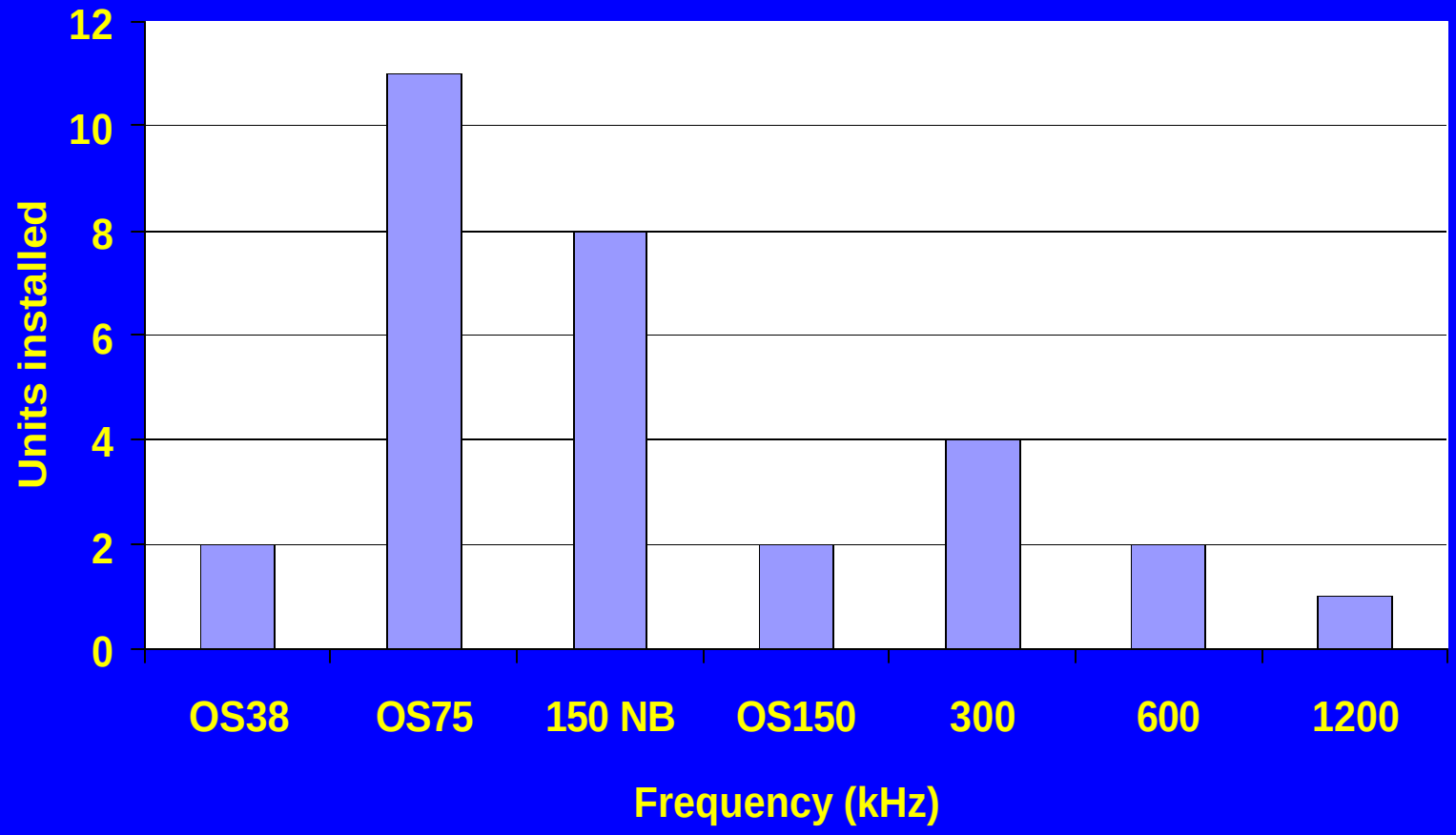
R/V Point Sur

ADCP Survey Representatives

Survey results based on responses from 14 different institutions representing 19 vessels

Thanks to those institutions who participated in the survey: Univ of Hawaii, Raytheon Polar Services Co., Skidaway Institute, SEA, LUMCON, Univ of Alaska, Bermuda Biological Station, Univ. of Rhode Island, Moss Landing Marine Lab, Univ. of Delaware, Univ. of Washington, WHOI, Scripps Institute of Oceanography, Duke

ADCP Survey Results

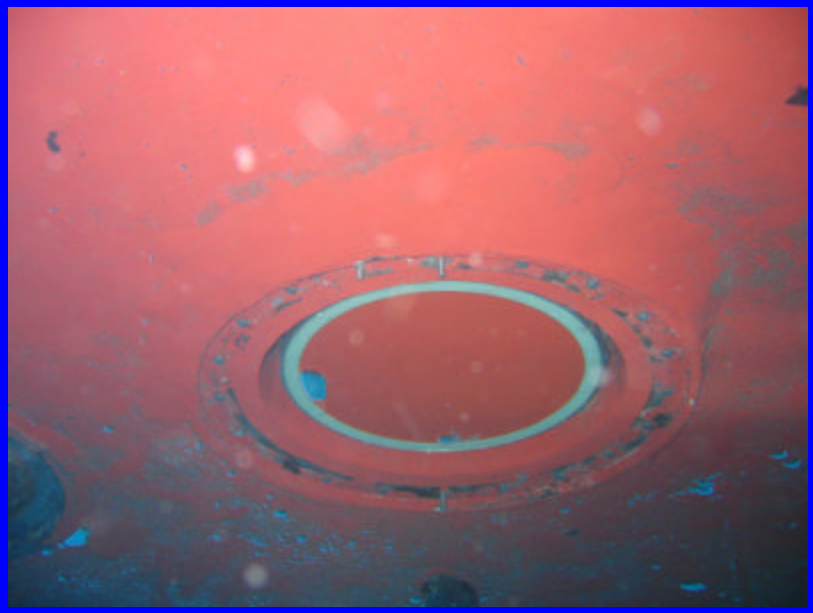


OS 75kHz is the most common ADCP installed on UNOLS vessels

ADCP Survey Results (cont.)

- Approximately 50% of installations included a window

Window on the R/V Alpha Helix



No window on the R/V Point Sur

ADCP Survey Results (cont.)

- The majority of users use the ship's gyro as a primary heading source
- Some type of silicon grease is the primary anti-fouling mechanism

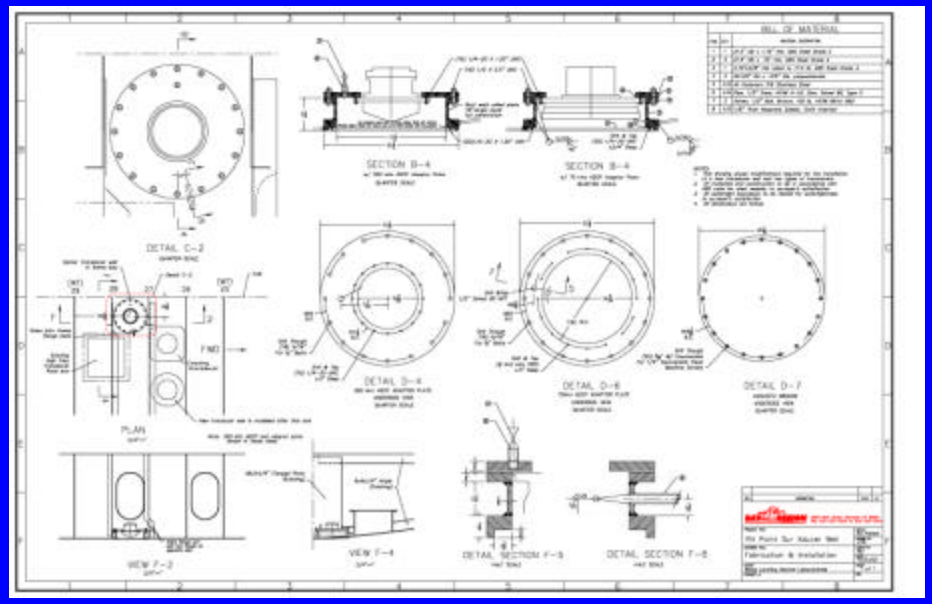
Discussion Section

Topics for discussion:

- Transducer well design and ADCP installation
- Operation of the ADCP/RDI software
- Lessons learned
- Resources Available

Design and Installation

- Transducer well design
- Acoustic windows, materials, thoughts on use
- Servicing or removing ADCP without hauling the ship out
- How to minimize “ringing” effects
- Transducer face antifouling recommendations

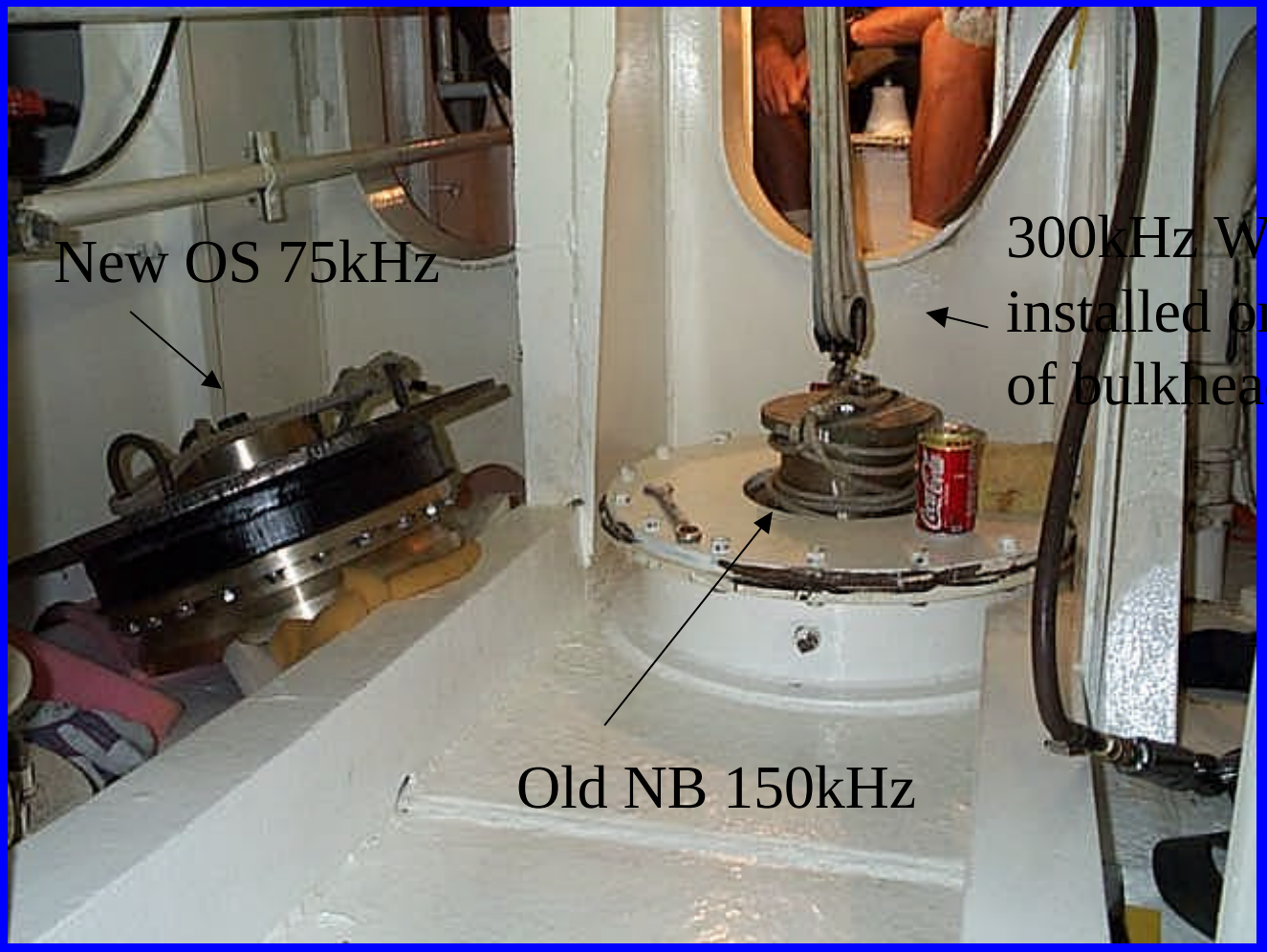


R/V Point Sur

R/V Alpha Helix

R/V Cape Henlopen

Out with the old, in with the new



Operation and Maintenance of the ADCP

- Setup and configuration of parameters at start of cruise (Science input??)
- Typical depth penetration seen
- Quality control of data
- Best heading, roll, and pitch data (biggest problems?)
- ADCP maintenance, factory refurbishment and calibration timelines

RDI Software Upgrades

- RDI is planning to release a new version of VMDAS soon.

Some of the new features include:

- New Auto-Rotation interface that allows the user to determine alignment offset in seconds through a software interface. (A 1% error in alignment equates to a 2% data error.)
- Easier nav,roll, pitch, and heading input
  - If you have nav, roll, pitch, and heading coming in one serial port (ie. From Ashtech, POS/MV, etc.), you don't need to have it go in on a second port as before.

**Copy of new software available for viewing but not for distribution

Lessons Learned

PLEASE WORK!!!

- ADCP's that just never seem to work right
- Software or communication issues that affect performance of the ADCP
- Problems with acoustic windows and configuring the software correctly when using them
- New OS 75kHz chassis is larger and won't fit in existing 150kHz well

Resources Available

- Jules Hummon has a helpful website to assist users in the setup and configuration of RDI Ocean Surveyor ADCPs.
  - http://currents.soest.hawaii.edu/docs/VmDAS_ops/index.html
- RDI is offering free online training classes.
  - http://www.rdinstruments.com/webex/index.html
- RVTEC list server and annual meeting

Additional issues of questions…….