

DRAFT
RVTEC 2004 Meeting Minutes
November 3-5, 2004
The Florida Institute of Oceanography hosted the meeting at
The University of South Florida – College of Marine Science, St. Petersburg, FL
Davis Hall, Room 130

The list of meeting presentations is included at the end of these minutes.

Introduction: Rob Walker

- logistics, networking, rides, meals,

Welcome: John Ogden (FIO Director)

- FIO is a consortium of 17 members, including U Miami, not a UNOLS operator
- Funds 100 ship days on a competitive basis to members. Primarily education but some research, mostly in Florida waters.
- As with others, they are trying to build a new ship to stay in the education oriented niche at \$3K/day for a 24x7. Have been campaigning for six years.

Introductory remarks: Dale Chayes

Agency Reports

NSF: Sandy Shor

- Don't have a budget yet for 2005. Are on a continuing resolution 'til mid-November. Expect a flat budget +/- a percent or two.
- Good news for facilities is that pressure is less this year so a flat budget doesn't look too bad.
- Expect about 3,000 NSF funded days this year. Last year was 3,200 or so.
- Instrumentation proposals deadline was 3 wks ago. Has about 2/3rds in hand. No surprised please
- Technical services proposals are due Nov 15th but are only annual reports this year.
- Dolly handled two \$20M proposals: Legend (Lamont) and new submersible (WHOI)
- Legend: will be owned by NSF after conversion
- Submersible: replace the Alvin. Design and build proposal is funded for a 6,500m plan. Two stages, pending proof of welding titanium.

- There is extensive oversight committee structure(s) for both effort.
- Jim Yoder adjusted the NSF budget process so that ships up to \$25M can happen as part of the normal NSF process.
- NSF Director: Colwell resigned a while back. Arden Bement (dir of NIST) was named acting. He has now been nominated as the director designate.
- OCE Division Director: Larry Clark is acting since Yoder returned to URI. There are four candidates. one will be selected in the next few weeks. Names are notionally public. Likely in place by January.

ONR: John Freitag

- ONR has a budget. Ship time is down ~25% this year driven by program. Field programs last year (and next). About 525 days so far, but will likely go up a bit as they year goes on.
- INSURV associated science inspections. Thompson (UW) was the first inspected. 17 Navy folks plus 4 science (Stewart Lamerdin, Marc Willis, Mike Web, John Freitag) folks. Judged successful. Two dockside, one at sea, one write-up, and on debrief day. Round table review (for science.) Generated a 75 page report. Melville will be next (in a couple of weeks.) Tony Amos will replace Stewart (who will be sailing to fill in for one of his technicians.)
- Handling systems. KM has had consistent problems with CTDs. Heavy weather and small ships are an accident waiting to happen. NSF (Dieter) and ONR have agreed to fund a study, not focused only on the US. Committee formed (Matt Hawkins based on his track record with the lab vans and the Cape Hatteras replacement, Marc Willis, Jim Holik (RPS), Andy Bowen (WHOI), Tom Althouse (SIO)) that has completed a preliminary (non-UNOLS) report that is not yet public. first part of the report addresses the KM. Happy to address to off-line. Visited several foreign vessels.
- Ocean Class vessels: The SMRs for ocean class are complete. Hull studies funded by ONR are complete. FOFC plan is being updated on the 5 year schedule. FOFC working group (will include the members in meeting notes.) Cohen announced that he would fund Ocean Class construction out of core 61 (R&D) money which is quite different than the historical approach, but only if they are X-Craft (which were designed a littoral warfare design.) He has "asked" that UNOLS give it serious consideration. A committee has been formed (Ocean Class steering group and the Fleet Improvement Committee.) A visit is scheduled. Admiral says he is open to other approaches if there are serious problems. There will be an operator selection process soon. Last week the National Science Board ended all cost sharing: no longer a requirement nor allowed.

- James Clark Ross has a very good CTD handling system, completely hands-off but big and expensive.

NOAA: Mike Webb

- Two new ships on line, one getting two new multibeam “now” in Portland
- Fairweather is out of the yard, in Ketchikan, doing chart work in SE Alaska two Resons and two launches.
- One sitting in Pascagoula with minor damage in Hurricane Ivan. Will be home ported in Kodiak.
- Were given the “Capable” (ex. TAGOS) a few weeks ago. It will be used for Ocean Exploration. It came with money (out of the defense budget.) Doug is working on developing the requirements (it’s “Ballards” ship.)
- Lots of turnover with ETs. Most of their ETs are very new to this business. Lots’ of training. There is a feeling in some quarters that “You can just hire people off the street, no problem.” A76 (a contracting out) process is thought by some to be the right answer. They are supporting 17-18 ships.
- Cromwell went to American Samoa to be used but it was sold for 1/2 the value of the fuel that was in it.

USCG: Jon Berkson/ Lt. Cmdr Don Peltonen

- Heavy Antarctic ice conditions since 2002 has led to a two-ship norm to break out McMurdo. Breakout has been 50 - 100 NM of ice compared to nearly 200 NM this year.
- Polar Sea: propulsion motors are condemned. Couple years to fix. Currently dock-side in Seattle.
- Polar Star: motors are okay. Will deploy shortly.
- Healy: is operational. Had port call in Provodynia recently.
- Replacement: Ocean Commission 6-4 says refurbish or replace two polar icebreakers. CG has commissioned Booz Allen Hamilton to do a study which is due in December 2004. Next step will be to do a mission needs statement and then a preliminary requirements analysis.
- Office of Science and Technology Policy is coordinating a US heavy icebreaker national policy summit (today or tomorrow.) Past and present roles, national needs, agencies, funding, policy.) CG, Marburger, NOAA,
- Homeland security has ‘05 budget. Directs funding of a National Academy study on role of icebreakers. Report by Sept 2005.

RVOC: Bill Martin

- Reports, workshops
- Nixon: insurance and liability issues for operators
- New medical support contractor
- Safety workshop: safety manual
- Safety committee: Will re-write the manual. Chapters to be re-formatted. Will make available on the web. Including hazardous materials. will be a pull out section to provide to chief scientists and PIs. Revised chapters are due January 15th. The assignment list is not quite finished. Where is the safe-working-load for wires in this effort? Wire committee and load handling committee

FIC: Marc Willis

- Projected gap between available ship days and the projected needs
- Regional Class: NSF will fund and NAVSEA will build using the integrated project team (IPT) approach. This is defined in an already signed MOA.
- Ocean Class: ONR will fund (as an X-Craft) www.nicholsboats.com. This is on a very short time frame. Someone from our community has to fill the “RVTEC” slot at the pending visit. november 17ths.
- Large ship mid-life refits are coming up soon:
 - Thompson (2006), Revelle ('11) & Atlantis('12)
 - Steering committee is formed to update requirements
- Discussion of Service Life Extension Projects (SLEP.) Operators of big (greater than 40m) UNOLS vessels were tasked to make estimates w/ no new capabilities. Range of 1 -5 \$M per ship for a 5 year extension. The resulting capabilities would be so far behind that the science would suffer.
- UNOLS fleet improvement plan is proceeding
- FOFC update is proceeding.
- Ewing replacement
- ARRV: Alaska Region Research Vessel
- CHRV: Cape Henlopen Replacement Vessel
- Alvin replacement
- Americans w/ Disabilities Act impact on research vessel design. Was considered

in the ARRV design. Not much guidance in the regulations for research vessels. There are for cruise ships.

- Air flow modeling is known to FIC.

AICC:

- SB2112 upgrade to NOAA Brown have been working getting the updated system to work since January.
- Support from LDEO last (2003) season from CCOM
- Anticipate an NSF solicitation for support of the 2006 field season

Break:

UNOLS report: Annette

- See Annette's report
- FIC/FOFC
- AICC
- DESC: Alvin replacement, Hybrid ROV, next meeting the day before AGU in San Francisco
- SCOAR: still working on membership, outreach: article in EOS, another in Oceanography. There is an aircraft request form modeled on ship time request. Our liaison to SCOAR has not moved. Letter from RVTEC chair -> SCOAR ref liaison.
- Scheduling: global ships will reduce to 280 days with down time in home port of operating institutions. There are some deferred days to go into 2006
- Quality Improvement: efforts continue. PCAR review. Debriefs from KM
- MTS article on fleet renewal. Booth at AGU. DESC meeting at AGU
- Marine Mammals info power point is on the UNOLS web site
- Peter Wiebe (WHOI) is the new UNOLS chair. Marsha McNutt (MBARI) is the chair elect
- Costs for port security are built into the current ship day rates.

Defines levels of technical support and instrumentation

- See report in minutes and web site
- Decided to standardize how we communicate our services to the public. Outline endorsed at last RVTEC meeting. No additional comments were received. Subcommittee has been completing the outline.

- Council enthusiastically endorsed the approach
- Plan to develop a fleet wide database and maintain the information.
- Have to articulate the requirements with the working group/committee
- Each institution will have to provide their own content
- Timeline is unknown, depends on availability of resources
- Please look at the detailed outline.
- Potential tie between the offered services and the post cruise assessment via the database.
- Potential tie between the ship time request form and the services that are “advertised”
- UNOLS is working on a “unified” database that would tie everything together.
- Maintain a revision history of changes and perhaps an automatic notification of change service.
- RVOC would like to have us to do something else.
- We have to update our list of points of contact including the person who maintains the info.

Ewing replacement: Dale Chayes

- See Power Point provided by John Diebold
- Title for Ewing will be returned to CU by NSF for sale.

Alaska Regional Research Vessel (ARRV): Steve Hartz

- Working on replacement of Alpha Helix
- Working on solutions to address ADA including one stateroom.
- Have a web site now:
- Estimated total cost: \$83M to build. Operating cost estimate \$23,800/day. Ice class is unknown at the moment.
- Expect to the funding to be included in the NSF/Major Research Equipment & Facility Construction (MRE/FC) request to Congress in 2006

Cape Henlopen Replacement Vessel

- Henlopen will retire in fall of 2005 and will be brought up by ship.
- Steel done in January.
- Dynacon for CTD handling system? Matt Hawkins is leading that effort.

1230: LUNCH

1320 return from lunch

Meeting trivia: Dale Chayes

- Candidates for chair
- Venue for next year
- Please pay Annette for dinner

ADCPs: Stewart Lamerdin

- Survey of what is in the fleet
- See his summary
- Windows, no windows
- Fouling, anti-fouling
- NSF (Shor) has funded Firing and Hummon through the SOEST ship technician support grant to provide some (to be defined) level of support for ADCPs in the UNOLS fleet.
- Discussion of how to QC the data.
- How to train?
- How to deal with troubleshooting and technical support at RDI. Their first level support is not always the most helpful. The vessel mounted component of their business is a very small portion of their business. There have been quality control problems.
- RDI does not seem to have much in the way of in-stock spares.
- How to establish configuration parameters.
- Broad range of users and levels of understanding on the part of different science parties.
- The older narrow band transducers had big problems with transducers delaminating.
- Design for maintenance.
- There is a new version of VMDAS coming.
- Let's set up a list-server for this discussion, particularly when Jules gets back (from her current event.)
- Open source might help move this process forward a bit.

OS38 install on Palmer: Michael Carpenter

- Gould: sand blasting grit was trapped in the well and a bubble on the face of the transducer
- They are using ethylene glycol on the Gould wells but propylene glycol on the Palmer.
- Window is Zelux W (1 and 1/2" thick) optically clear.
- There is a waterline free-surface, no hydrostatic head.
- Discussion of cables, bend radius, and interference.

Organizational Excellence Driven by Customer Satisfaction: Lynn Wright

- An approach to improving the process

Alliance for Coastal Technologies (ACT) Sherryl Gilbert

- Integrated Ocean Observing System (IOOS)

Coastal Ocean Monitoring (comps) and Physical Oceanographic Real Time Systems (PORTS): Cliff Merz

- In situ real-time measurements and modeled data

Ocean Technology Center: Larry Langbrake

- Started out developing applications to go in AUVs.
- On to in situ mass spectrometers and absorption techniques. Moving on to MEMS so that they can be smaller, less expensive and cheaper.
- Miniature cylindrical ion traps (500 microns in diameter.) They have a working one in the laboratory at about 10 ppb sensitivity.
- Working on 3D imaging (acoustic and laser line scan) for port security applications.

Thursday

- Three candidates for chair:
- Lynne Butler (URI), Woody Sutherland (SIO)
- Bill Martin (UW)

Shipboard automated meteorological Workshop (2) Shawn Smith

- Formerly High Resolution Marine Meteorology initiative
- See presentation
- Science driven
- Automated instruments on ships
- SAMOS: computerized data acquisition systems for met and near surface data.

- See workshop reports
- Have been funded for a data assembly center and a calibration standard
- Airflow modeling is essential to understand “good” installation location and corrections for accelerations and air (level) source.
- Document best practices
- Want automatic one minute averages on a daily basis. WHOI and SIO are pilot partners in setting up this system. Expect to do automatic QC and preliminary release of QC'd data in 48 hours.
- Liaison to the long-term national archive
- Have draft data and metadata specifications

SeaNet: Dale Chayes (for Andy Maffei)

- Continuing operational support through Laura
- Future support through WHOI from Jim Aikens

Radio Frequency Spectrum

- Contact the UNOLS office

HiSeasNet: Steve Foley

- It is an IP data link at 96k bits per second, It is not RoadNet which is software.
- It is leased bandwidth that “we” can use whatever we want with it
- It's big hardware. Ground station at UCSD/San Diego Supercomputer Center (SDSC).
- Needs GPS and gyro feed. Ship end is a small Cisco router and a 2.4m SeaTel antenna in a 3m diameter “dome”
- Current ships: Revelle, Thompson and Melville. Adding Ewing Replacement, Atlantis and Knorr
- In heavy weather the link falls. Traffic can overload (saturate) the link
- How does the “fair” queue get implemented?
- How insure the video conference of “96K” (shut down other services.)
- Out going (mostly) only Voice Over IP (VOIP) phone calls
- C-band is \$35K/ship/year (bandwidth + support)
- Limit VoIP to a couple of handsets on the Revelle
- How much effort to take care of the link? Shipboard technicians generally handle maintenance from the ship end. Drifts of satellite occasionally. Some adjustments

to policy. For Windows, they run a local Windows update server on each ship and control updates from there. By normal configuration, the block most outbound traffic

- They use a web proxy (helps with traffic management)

SeaWave: Bill Fanning

- See presentation at RVTEC 2003. Lots of promises
- Installed a SeaWave system on the Endeavor.
- They were local so took it on a trial basis. They were very responsive.
- It was not ready for prime time. Seems like they expanded and patched up an older system that used HF radio to handle new comms channels. It does not seem like it was designed for this.
- Two months ago, they provided a new system which is much better. The old one was not ready.
- New one is an IP-interfaced box. Iridium and GSM cell phone attached. External use of Inmarsat but is not working right yet.
- Browser based or IMAP email. Phone through PBX.
- About \$0.18 per kilobyte, range of \$.95 to \$0.10/kbyte depending upon efficiency of usage.
- HBOI/RSMAS Fleet 55 on one ship and Fleet 77 on the other. Customer support quality was disappointing. Has gotten somewhat better.
- UW: has a system onboard for phone calls. Have about changed their billing plan to charge a minimum of \$5/month even if no usage. If there is no traffic there will be a charge. If there is any traffic there will be a \$5 minimum charge. If you de-assign or delete the account there can be no traffic.
- What is the plan for ships that have SeaWave when HiSeasNet comes on?
- Dale: Running multiple mail servers on board leads to far more hassle than it's worth.

VSAT on RRS Ross and Shackleton: Geriant West

- Invsat (wholly owned subsidiary of Inmarsat)
- Using commercial earth station at Aberdeen
- So far: Run stations as "ships": Ross, Shackleton, Rothera, Cambridge
- Will connect more bases this year
- Single mobile email account (wherever you are)
- Will do the same thing on the Cook.

- Per ship install about 80K pounds. 3.5 to 5K pounds per ship for higher bandwidth

Dragging for a lost mooring: George Tupper

- Done from the Endeavor with a science party of one.
- Mooring was not designed to be released or recovered. it was working when it was launched but after a few months it was determined that it was not working. Used a transit leg to install a replacement and then drag for the failed one.
- Seven of eleven of a suite made by Webb Research have failed. Two previous attempts to recover a failed one (to figure out what's wrong.)
- Wrapped the trawl wire around the mooring and sawed it off.

Break

INMARTECH 2004 report: Woody Sutherland

- Travel logistics getting there weren't too bad
- There were only 6 people from the US and 40-50 total
- Woody Sutherland (SIO), Marc Willis (OSU), Toby Martin (OSU), Sandy Shor (NSF), Barrie Walden (WHOI), Andrew Giard (WHOI), Phil McGillivray (USCG), John Freitag (ONR), ?
- Ran out of beer early on at the reception

Discussion of INMARTECH 2006

- Location: WHOI
- Organizers: Barrie Walden (WHOI), Eric Zettler (SEA), Lynne Buttler (URI)
- Lessons learned from the 2004 meeting:
- Meeting focus was not particularly clear
- Organized transportation (Boston -> WHOI) to/from airport(s)
- Organized transportation (during meeting)
- Organized transport after meeting
- Substantive presentations/talks
- Concurrent sessions? Requires significant number of content.
- Expect US turn out to be much bigger than typical INMARTECHs because there are more of us?
- Work hard to engage a broader international range of groups

- Collaborate with the other INMARTECH folks
- There may be travel funds available from David Blake left over from this year's meeting.

Foreign Clearances: Woody Sutherland

- How to get permission to run normal underway data on transits and in EEZs.
- Reporting issues: timing, formats, media, content

Lunch

Review of where/when RVTECs

- Location of next year (US West Coast)
- When (fall?)
- Coordinate with RVOC? w/ Oceans?
- Tentative offer from OSU to host the meeting in Corvallis

Towed systems: organized by Stewart Lamerdin

Acrobat LTV-50X: Brian Lincoln

- Small, light (40 pounds) as configured (SBE-25), can add more
- Focused on shallow water (less than ~ 50m)
- Takes about 10 minutes to get up and running and hours (6) to fly right.
- Added a frame on the bottom. Can add up to 50 pounds and it will still fly.
- Small portable winch.
- Two computers: 1) flight control; 2) data acquisition
- AC variable speed winch drive
- Added a break-out box to allow easy reconfiguration
- Increased wing size to make it easier to control.
- The only thing it comes with is a pressure sensor and actuator for the wing
- With manual control you can get 6 cycles per kilometer at 6 knots. With auto control, only one.
- Easy to deploy, more water, easy to add to, small, light
- Acrobat itself ~\$30K (without SeaBird)
- Two 3-4 days 24x7. Usually the science party fly.
- Controls is over 4 conductors, data are four more. Nutrient sensors require 1 amp. Bought a 10 conductor cable.

- Maximum depth: 600m but usually don't go more than about 100m
- Controller software gets depth from the sounder in real-time
- If you hit the bottom, it will roll automatically

Scanfish MKII: Dave Nelson

- Originally was made by GMI, now owned rights by EVA, which they bought from Chelsea who bought GMI. McArtney was supposed to have bought GMI. The engineer who built it ended up with McArtney.
- URI, UDel and Maryland all have similar units.
- Carries SBE 911 (24 scans/second)
- Have installed fast scan (400HZ) microstructure surveys.
- Lost the first one off the Pt Sur two hours into the first cruise. Could not lube the faired cable.
- The original system was sample the water inside the wing.
- Have an emergency beacon on the new tow fish, just in case.
- Has an onboard altimeter that automatically causes the auto cycler to turn around. This does not work right in the presence of a deep scattering layer which can be over ridden (with care.) Also has attitude sensors.
- Put an optical plankton counter (OPC) on the fish.
- Don't go to sea without a Dremel tool.
- Minimum speed is 3-5 knots, maximum is 10 without OPC and 8 with.
- Automatic bottom avoidance feature is very good.
- Max depth about 200m w/ 900 m of wire out.
- It is possible to roll the vehicle if it gets launched up side down.
- It is heavier than the Acrobat but still light.
- If the Mocness is the model T of the fleet, then the GMI Scanfish is a Jaguar.
- Existing flight software is MS-DOS based. New, Windows software is in the budget. Also buy the software to play back the flight data.
- Ordered winch was different than what the accepted. The current one is too big and not computer controllable. Will probably order a new one.
- A301301 (1/2" wire) three coaxes (fish, CTD and OPC) and two copper (one for power /w armor)
- Recovery pole w/ hook and V

- Gear deflectors work fairly well, but not against seaweed
- Cost? Scanfish (alone) \$95K, CTD \$40K w/ transmissiometer, winch
- Dedicated technician? it's a complex system and
- Flaps electrically operated? yes, via drive screws w/ angle sensor and arm

Triaxus: Stewart Lamerdin

- University Alaska, APL/UW and MLML have them.
- Horizontal and vertical undulation, carbon fiber hull
- Many data channels,
- FO gyro, pressure sensor
- Runs on coax or fiber through it's interface
- Windows user interface
- Dynacon winch, has worked very well
- 3km of 0.393 (two FO and two copper conductors) cable
- Quick setup (2 hours?)
- Company (McCarthy?) has been receptive to R&D efforts.
- Forward and down looking altimeters for bottom avoidance seems to work well.
- Plan to build a deck cradle.
- They require two technicians to sail with the Triaxus.
- They ran it 90+ days last year and project 90+ this year.
- This unit limited to 200m. Are working on a 400m version that has much bigger surfaces (and a bigger vehicle.)
- Can undulate at 1m/s
- Working with APL they have gotten quite good customer support
- Current vehicle is about \$250K
- System is designed to work on FO cable.

SeaSoar Chelsea Instruments: Marc Willis

- First in '90 and second in '91
- Lots of modifications by OSU
- Propeller driving hydraulic pump through a Moog valve controlled from the

surface.

- It's heavy, awkward, unstable, but you can put a lot of stuff on it.
- Towed it a lot in 14 years.
- Termination: three turns (friction) with a simple clamp.
- Cable: Rochester, "torque ballanced" 0.322, three copper conductors w/ fiber cores
- Fairings:
 - Indall flex nose (three piece) very effective for a couple of weeks 'til it falls apart, \$18/m plus labor
 - Zipper tubing "hairy" fairing: NFG
 - Tough Line: vinyl coated fabric sections, \$9-10/meter
 - None (their favorite)
- Winch: beefed up ROV winch is fantastic
- Cost: 1990 w/ lesser winch cost \$125K. No idea what they cost now.
- No dedicated people but time. Always take two technicians minimum, sometimes three.
- Vehicle can pull about 400m of unfaired cable, about 120m depth range. With good clean fairing, perhaps 300m. With bigger wings and 700m got down to 550m.
- Depth limit: 10 above the bottom in any water depth

Moving Vessel Profilers: Arnold Furlong, Brooke Ocean Technology (BOT)

- See presentation
- Many systems and products, including handling systems, ocean profiling systems, MVP, laser optical plankton counter (OPC), free fall penetrometer, handling systems, small winches, metering sheaves, moored wave profilers
- MVP30 (to 30m at 12 knots)
- MVP100 (100m CTD, and sound speed)
- MVP800 (800meters at 12 knots)
- Delivered 30 systems to date. Some losses due to cable termination problem. One snag while towing, stripped the cable off the reel. One UK loss
- Dutch Navy does about 600 casts per day on two ships.
- Cable is Kevlar or Vectran. Only one system has steel (on the ferry) and it's

showing a bit of bird-caging in armor. Four conductor cables (using two: RS-422.)

- KM not used for multibeam yet.
- Free beer courtesy of Eric Zettler!
- Various sensors: CTDs, flourometer, LISST, etc.

Kilo Moana MVP: Steve Poulos

- See presentation
- Installed in July 2004
- The level wind happens by moving the drum laterally.
- Preferred a SeaBird but took an Applied Microsystems due to shock loading
- Loading cable on the winch is a bit tricky.
- Takes two technicians two days to wind/unwind 3,400m of cable.

Lessons from MVP on the Discovery: Geraint West

- Since 2001 and had a lot of problems (perhaps more than everyone else combined)
- Brake solenoids burning out. Lost a fish when a ship took a significant roll, significant enough to shift equipment in the labs. Tore up a rope guard, lost fish.
- Perhaps it was an installation or maintenance problem. A formal report is pending. It's possible that there was enough roll-induced slack to catch the guard.
- A confidence rebuilding activity is pending after the lesson (whatever it might be) is learned.
- Brooke has been very supportive.
- There is attitude data available.

Ship's Wireless Access [Project|Protocol]: (Val Schmidt, Toby Martin and Geoff Davis)

- Simple, commercial, inexpensive wireless networking hardware and software.
- Seven shore nodes in place at present
- The 10 step program:
- Sign up for the list server
- Review the hardware requirements
- Antenna locations.
- There probably good reasons in a high multi-path (such as ships and water)

diversity antennas. Location matters, Altitude is good. Cable runs and routing.

- Generate a hardware list for your installation
- You need to if you want to play by your self.
- Get your network IP assignments
- Download, install and configure the latest SWAP distribution
- Requires a a Linux box and a flash card interface
- Assemble all the pieces
- Consider your networking topology (setup)
- Insert your (properly configured) CF card, boot and test
- Install the hardware on your ship
- SWAP on!
- Broad ranging discussion about scalability and other uses.

System backup, restoration, dissemination etc.: Val Schmidt

- See summary of the responses to the questionnaire
- Some OSs are “supported” because some applications only run on them. System admin complexity dramatically as the number of OSs increases.
- Problems with system integration and authentication with “all in one” RAID servers administration front ends.
- DVD-R and CD-R have longer life than re-writable media.
- The manufacturing process (which changes) has a huge impact on longevity of storage. Newer media is around 50 years. One of the failure modes is the kind of dye, another is the lamination.

Done for the day

Friday morning

Mate report - presented by Annette deSilva

- See report, more info at their web site
- Suggest doing a telephone interview with interns before they show up.
- Some discussion of experiences, mostly mixed.

Equipment maintenance database - Ilya Nikanorov

- Started in December 2003 to get organized

- A very comprehensive approach to inventory, scheduling, resource management, configuration management, documentation, log books, and knowledge base built on distributed databases between ships and shore site(s)
- Start w/ Access, then move to MS SQL-2000 server
- Web interface also works from PDAs via wireless 'net.
- When done with this set of goals, intend to add project management, procedure development system, financial controls, data comparison, analysis tools.
- Although they are trying to be ISO-9000-lite, they do not have a roll out schedule
- right now, they are trying to get the inventory system under control. They have a developer working on this effort.
- How would this scale down to small ship operations?
- They have ~1/2 an FTE working on this effort.
- Geraint: they are working on a similar effort. Tens of thousands of items, hard to get buy-in from technicians, spread over multiple sites.

Printed Circuit board fab and PIC processor development: Tom Wilson

- See presentation
- Usual disclaimers apply
- In spite of the manufacturers, there is still a need for design and fab of custom hardware
- Options for boards: Production houses, prototype houses, desktop fabrication
- Design a board
- Print it on a magic paper (decal with a glue layer) available from DigiKey, Mouser, etc. has to be a laser printer.
- Stick the "decal" on G4 or Kapton (flexible) with a modified "standard" laminator from the office supply house.
- Soak the decal and then peel the resist off.
- Etch with a tank and sponge (with gloves on.)
- Clean the resist off w/ acetone
- Drill (first)
- Tin plate with immersion method, now available from Dow Pro
- Review of PIC processor range

- Microengineering Labs has a BASIC compiler for PICs.
- Only you can keep the E in ET!

Cape Hatteras internal comms - John Ahern

- Looking to replace their Atkinsons and family band radios
- Two problems: internal and out to deck
- Internal, wired intercom
- External, 21MC/Atkinsons
- New Atkinsons are vastly better but can't mix and match very well at least on some cases.
- Problems w/ feedback if too close together because they are so sensitive
- Simplex radios have a problem when trying to countermand a communications problem.
- Have a look at workboat expo or workboat expo where the interesting systems are available
- Whatever it is, you need to have a plan
- Internal wired phone systems
- Don't forget about hand signals
- KM: "clear coms" allows listening to VHF radio comms in the lab.
- Radios always have battery problems. Antenna location. Voice activated mikes can be a problem in high noise environments (such as on deck.)
- High noise (motorcycles, cockpits, etc.) (Autocom, J&R and Baer) radios might be helpful. Wind noise can be reduced by a separate mike. A real noise-canceling mike makes a huge difference.
- Offer ideas to the mailing list.
- John will summarize and circulate.

Committee reports:

Wire subcommittee - Rich Findley

- We need a clear definition of "safe working load"
- There is already a clear definition of ratings for the overboarding gear chain.
- Discussion of who and what safety factor is.
- Rich, Mac and Tom will draft a "one sentence" question that RVTEC will put to the UNOLS RVOC Safety Committee.

- Revised wire performance spec has been offered for review.

Break

Rich and his ad hoc committee (Marc, Rich)

- **To work on a formal “one sentence” definition of the “safe working load question” which we will put forward to the Safety Committee**

Training and education committee - Bill Martin

- Next year perhaps Phil Gibson on wire.
- Europe and Asia have more experience with synthetics than we do. Would be a good thread for INMARTEC.

Election of chair - Jay Tustin

- Candidates: Bill Martin (UW), Woody Sutherland (SIO), Lynne Butler (URI)
- Bill Martin is elected chair.

Next meeting location:

- Marc Willis has offered to consider hosting at OSU/Corvallis
- Time window: mid-October to early December
- Does the meeting have to be at an operating institution: well, not really but it's nice to see the facilities and ship. Makes it easier for folks from the local institution to participate.

Disposal of chemicals at sea - Stewart Lamerdin

- What are others doing?
- What are the rules?
- Where should guidance come from?
- What does down the drain?
- What can go over the side?
- Seawolf is a zero discharge vessel but only handles very short legs.
- Storage on board can be problematic and/or raise safety issues.
- SIO: Home institution guidelines apply, then SIO reviews the plan? Usually go along if the home institution assumes the liability.
- USCG: Healy has a list for handling.
- Your institutional safety committee will have guidelines. Most (if not all) institutions require an end-to-end plan for chemical handling.

- As part of his participation in the safety committee is re-writing that chapter for the safety committee. Will post an early draft to the RVTEC list for comment. This chapter has to be complete by January 15th. Draft to the list by mid-December for review.
- Physical safety issues associated with outside storage of hazmat. No more than a one day supply in board.

NOTICE:

- Human powered submarine races are being revived: bguest@whoi.edu

Adjourned

List of Meeting Presentations:

Day 1: Wednesday, November 3, 2004

1. [Meeting Agenda](#)
2. [Participant List](#)
3. [NSF Report](#) (Sandy Shor)
4. [ONR Report](#) (John Freitag)
5. [RVOC and Safety Committee Report](#) (Bill Martin)
6. [Fleet Improvement Committee Report](#) (Marc Willis)
7. [UNOLS Report](#) (Annette DeSilva)
8. [Definitions of Levels of Service](#) (Annette DeSilva)
9. [EWING Replacement Vessel Update](#) (Dale Chayes)
10. [Alaska Region Research Vessel](#) (Steve Hartz)
11. [Cape Henlopen Replacement Vessel](#) (Tim Deering)
12. ADCP Discussion (Stewart Lamerdin)
 - a. [ADCP Powerpoint](#)
 - b. [ADCP Survey](#)
13. [38 kHz ADCP](#) (Michael Carpenter)
14. [Organizational Excellence Driven by Customer Satisfaction](#) (Lynn Wright)
15. [Alliance for Coastal Technologies](#) (Sherryl Gilbert)
16. [Coastal Ocean Monitoring Systems](#) (Cliff Merz)
17. Ocean Technology Center (Larry Langebrake)

Day 2: Thursday, November 4, 2004

18. [SAMOS Initiative Program](#) (Shawn Smith)
19. [HiSeasNet](#) (Steve Foley)
20. [VSAT onboard RRS James Clark Ross](#) (Geraint West)
21. [Dragging for a Lost Mooring](#) (George Tupper)
22. [RIDGE Metadata](#) (Dale Chayes)

23. [INMARTEC 2004](#) (Woody Sutherland)
24. [EEZ Clearance Process](#) (Woody Sutherland)
25. [Acrobat Vehicle](#) (Bryan Lincoln)
26. [Scanfish MKII](#) (Dave Nelson)
27. [RVTEC Meeting Location History](#)
28. [Triaxus](#) (Stewart Lamerdin)
29. [SeaSoar](#) (Marc Willis)
30. [MVP Product Information](#) - Brooke Ocean Technology (Arnold Furlong)
31. [KILO MOANA MVP Installation](#) (Steve Poulos)
32. [MVP Fish Loss from DISCOVERY](#) (Geraint West)
33. [SWAP Discussion Presentations](#) (Val Schmidt and Toby Martin)
34. [Data Management Survey Results](#) (Val Schmidt)

Day 3: Friday, November 5, 2004

35. [MATE Report](#)
36. [Equipment Maintenance Database](#) (Ilya Nikanorov)
37. [Desktop Printed Circuit Board Fabrication](#) (Tom Wilson)