STARC
Report to AICC

Seattle Washington

USCG Base Seattle

January 10-11, 2018

Photo by: Britton Anderson

Presented by: Brett Hembrough – Arctic Cruise Coordinator
Lee Ellett – Manager Shipboard Tech Support – SIO
Andrew Woogen – MarTech Manager - OSU

NSF STARC Grant

Ship-based **T**echnical Support in the **ARC**tic

- Collaboration between Scripps Institution of Oceanography – UCSD and Oregon State University
- In cooperation with USCG
- Entering 5th year of 5 year grant (2018)
  2014 - 2018

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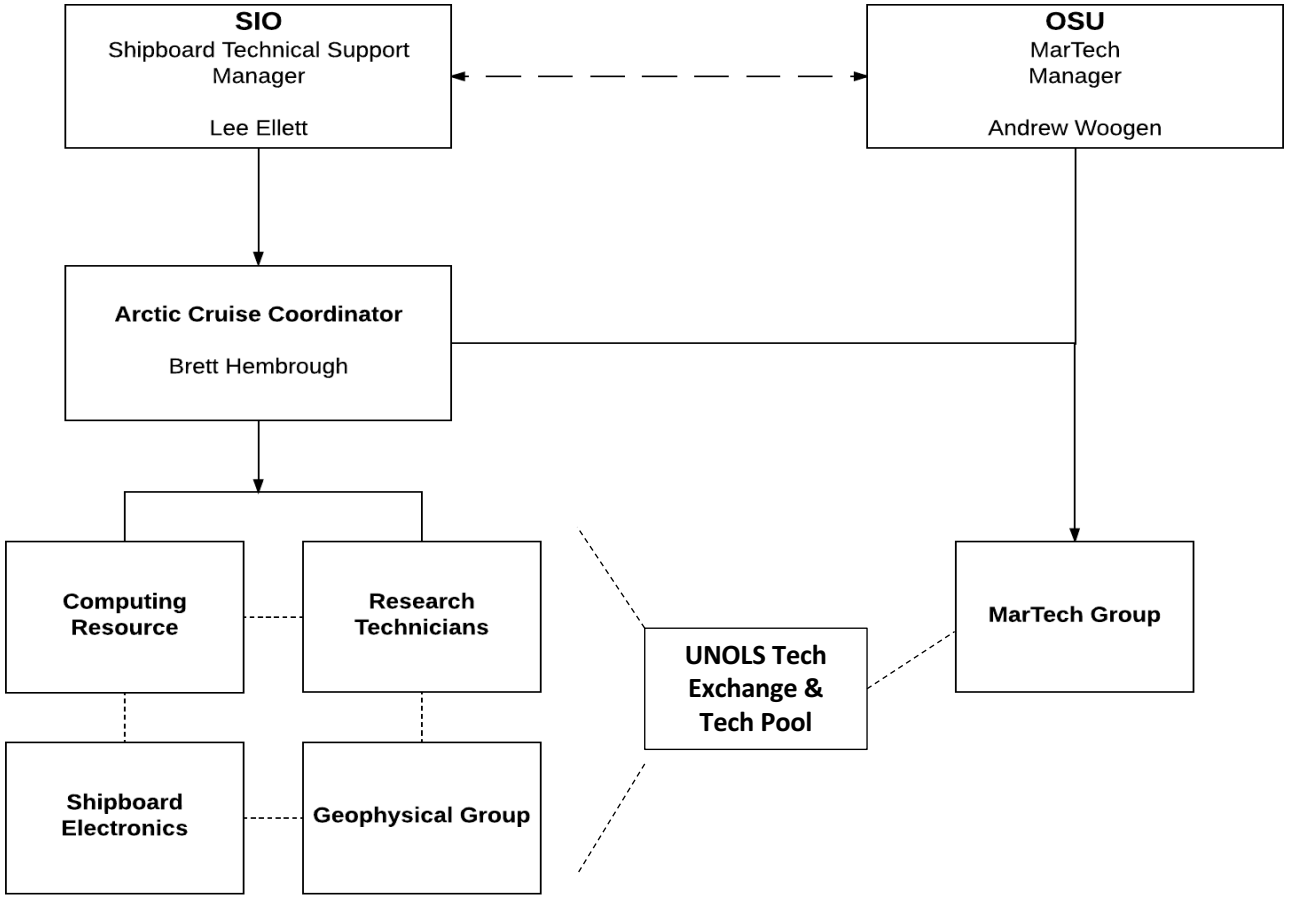
STARC Org Chart



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STARC Personnel

Established staffing consistency throughout field season

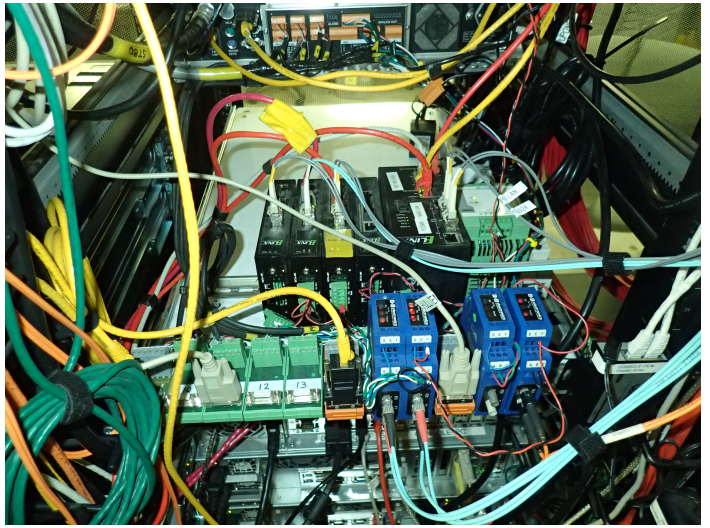
- **Only** staffed cruises with experienced techs with recent dockside and underway experience (3 tech model)
- Trained new techs during pre-season and transits
  Multibeam (Sweden), Fiber Optic (UDEL / Seattle)
- Building technical resources for the future

Utilization of UNOLS Tech Pool and Tech Exchange

- Able to bring in specialized skill sets
- Matrixed support to complement OSU / SIO techs
  More scheduling flexibility
- Diversity and experience from other ships / institutions

Documentation and Diagramming

Completed all science spaces and computer racks



- Shortens troubleshooting time
  - Know where to look and what to look for
    Less wire tracing ☺
- Cable organization and Clean-up
- Labeled all connections at both ends
  1. Local port - ex: Advantech port 12
  2. “What it is” - ex: Seapath GPS
  3. * Intermediate info ex: Rack 6 to Rack 5 (if necessary)
  4. Final Destination – ex: Multibeam computer

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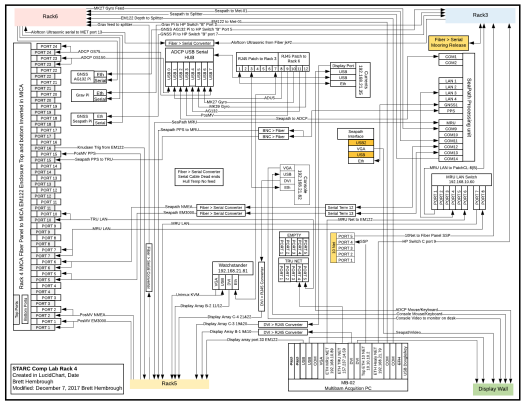
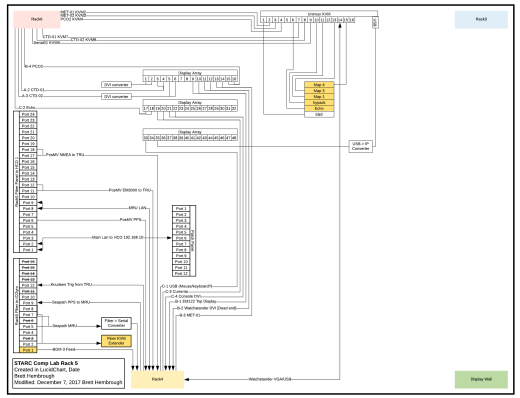
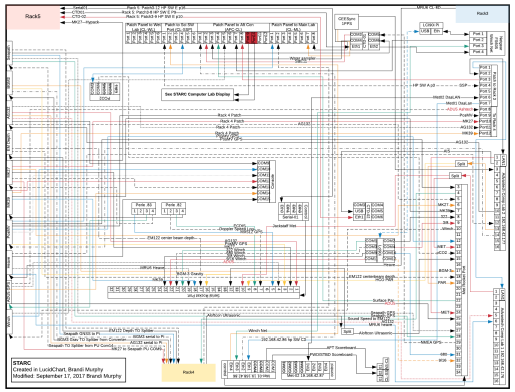
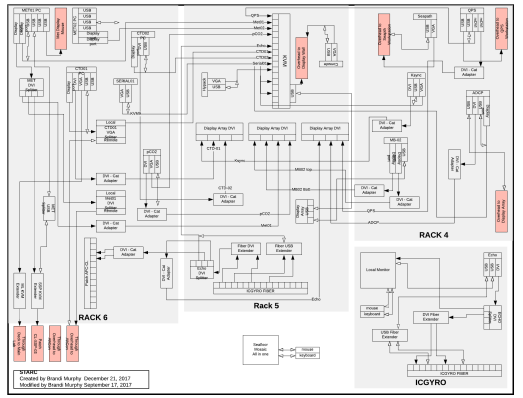
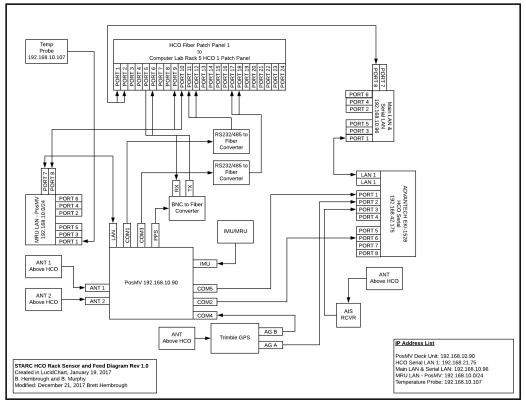
Diagrams (LucidChart)

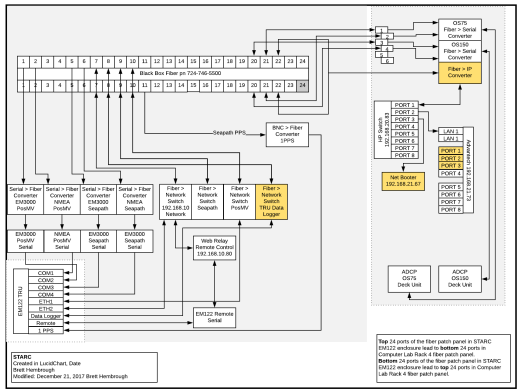


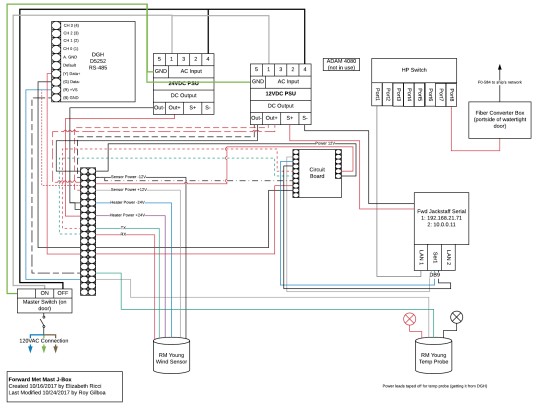


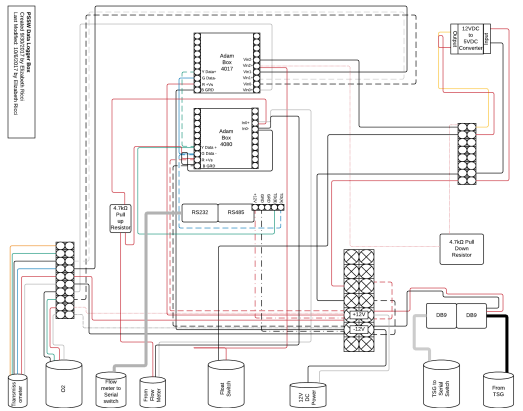












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Standardized Weekly Reporting

Same format across all cruises and techs !
Critical due to multi-institution support structure

- Techs received formal training on reporting style and critical info to include (Power Point presentation)
- Track instruments by serial number
  - Long term performance evaluation
  - Record of sensor swaps
- Checklist format
  - Easily compare to previous reports
  - Nothing left out
- Reminders to include weekly system checks/tests
  - Multibeam BIST
  - Gravimeter Voltages
  - PCO2 Gas Log

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Weekly Report Template

Ship: USCGC Healy WAGB20
Cruise ID:
Chief Scientist:
STARC Techs:
MATE Intern:
Date:

Cruise Summary:

Operations Summary:

1. Science Systems

- **Seapath:**
- **SeaTex MRU6:**
- **PosMV:**
- **Science 1 PPS:**
- **GPS:**
  - **Trimble AG 132:**
  - **AshTech ADU5:**
    - ☐ Resets? – How Many ?
- **MK39 Gyro:**
- **Multibeam EM-122:**
  - **SIS:**
    - ☐ Run Weekly BIST? attached?
  - **TRU:**
  - **Helmsman:**
- **Mosaic:**
- **Knudsen Echosounder:**
  - **3.5 kHz:**
  - **12 kHz:**
    - ☐ Acoustic release use?
- **ADCP:**
  - **UHDAS:**
  - **OS 75:**
  - **OS 150:**
- **K-Sync:**
- **Sippican MK21:**
  - XBTs deployed-
- **QPS:**
  - **Qinsy:**
    - ☐ Ice Imagery Imported?
  - **Qimera:**
  - **Fledermaus:**
- **Hypack:**
- **Open CPN:**
- **AIS:**
- **GeoMap App:**
- **MapServer:**
- **TeraScan:**

- **Meteorological:**
  - **FWD JackStaff Sensors:**
    - ☐ **Temperature (RM-Young)**
      - S/N 26190
    - ☐ **Ultrasonic Wind (RM-Young 85004)**
      - S/N 00894
  - **Main Mast Sensors:**
    - ☐ **Ultrasonic Wind (RM-Young 85004)**
      - S/N 00703
    - ☐ **Wind Bird Port (RM-Young 05106)**
      - S/N 80186
    - ☐ **Wind Bird Stbd (RM-Young 05106)**
      - S/N 80185
  - **Bridge Sensors:**
    - ☐ **Relative Humidity/Temp (Viasala HMP110)**
      - S/N- N0930175
    - ☐ **Relative Humidity/Temp (E+E EE08-PFT1V11D6HCO1/T02)**
      - S/N- 17080500052093
    - ☐ **Barometer (RM-Young)**
      - S/N-
    - ☐ **Temperature (RM Young)**
      - S/N-
  - **HCO Sensors:**
    - ☐ **Surface PAR (Biospherical QSR2200):**
      - S/N- 20153
    - ☐ **Spectral Pyranometer (Eppley PSP/SPP):**
      - S/N- 35032F3
    - ☐ **Infrared Pyranometer (Eppley PIR):**
      - S/N- 34955F3
- **LCI-90i:**
  - Scoreboards:

2. INFRASTRUCTURE

- **E-LOG:**
- **Console PC:**
- **Watch Stander PC:**
- **CTD/XBT PC:**
- **Multibeam PC:**
- **Knudsen PC:**
- **K-Sync PC:**
- **QPS PC:**
- **Hypack PC:**
- **Bridge Met PC:**
- **Linux Systems:**
  - **ADCP Computer**
  - **Met Computer**
- **Serial Logger:**
- **KVM:**
- **Raspberry Pi:**
  - **Computer Lab:**
  - **Aft Con:**
  - **Main Lab:**
  - **Bio Lab:**
  - **Bridge:**
  - **Aloft Con:**
- **Displays:**
  - **Computer Lab:**
  - **Aft Con:**
  - **Main Lab:**
  - **Aft Con:**
  - **Bridge:**
  - **Aloft Con:**
- **Web Cams:**
  - **IC Gyro:**
  - **Port SSW:**
  - **Board of Lies:**
- **Power/UPS:**
  - **Computer Lab (Eaton):**
  - **Aft Con(APC):**
  - **HCO (APC):**
  - **MICA Stores:**
    - **APC:**
    - **Acumentrics:**
  - **IC-Gyro (DRS)**

3. NETWORK

- **Advantech:**
- **Comtrol:**
- **Fiber Optic:**
- **Perle:**
- **Time Servers:**
- **Healy NAS:**
- **VSAT:**

4. EQUIPMENT

- **CTD:**
  - **Conductivity:**
    - S/N-
  - **Temperature:**
    - S/N-
  - **O2:**
    - S/N-
  - **Fluorometer:**
    - S/N-
  - **Transmissometer:**
    - S/N-
  - **Altimeter:**
    - S/N-
  - **Carousel:**
    - S/N-
  - **Niskin Bottles:**
- **XBT Launcher:**

- **Science Sea Water (SSW):**
  - **Surface Temp:**
    - S/N-
  - **Port Side:**
    - **Thermosalinograph:**
      - S/N- 0347
    - **O2:**
      - S/N- 1333
    - **Turner C3 Fluorometer:**
      - S/N- 2300-341
    - **WetLabs C-STAR Transmissometer:**
      - S/N- CST-596PR
  - **Bio Lab:**
    - **Thermosalinograph:**
      - S/N- 0348
    - **O2:**
      - S/N- 1307
    - **Seapoint SCF Fluorometer:**
      - S/N- 3004
- **Milli-Q:**
  - **Main Lab- A10 Advantage:**
  - **Wet Lab- Academic:**
- **pC02:**
  - ☐ **Gas Volumes checked?**
- **Gravimeter:**
  - ☐ **Voltage Test Points checked?**
  - ☐ **Entered in Google Drive?**
- **AutoSal:**
  -
- **Pingers:**

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STARC Surface Pro

Troubleshooting Tablet – plug into terminal

- Grab and Go carry case with multiple connectors/adapters
- Pre-loaded with system specific software installed

Tech Reporting Tool – portable w/ online access

- Syncs to Healy NAS – long term record and back-up
- Used for Daily Rounds
- Notes for Evening Planning Meetings, etc

Shows great potential will continue to fine tune use during 2018 season

Daily, Weekly, Monthly

Defined Technician Responsibilities and Recording

Daily:

- Rounds to all STARC system locations
- Visual inspection of sensors (inside and outside)

Weekly:

- Multibeam BIST (Built in Self Test)
  - Record of performance over long term and varying conditions
- Gravimeter Voltage Readings
  - Provide to PFPE via Google Drive
- PCO2 Gas Log

Monthly:

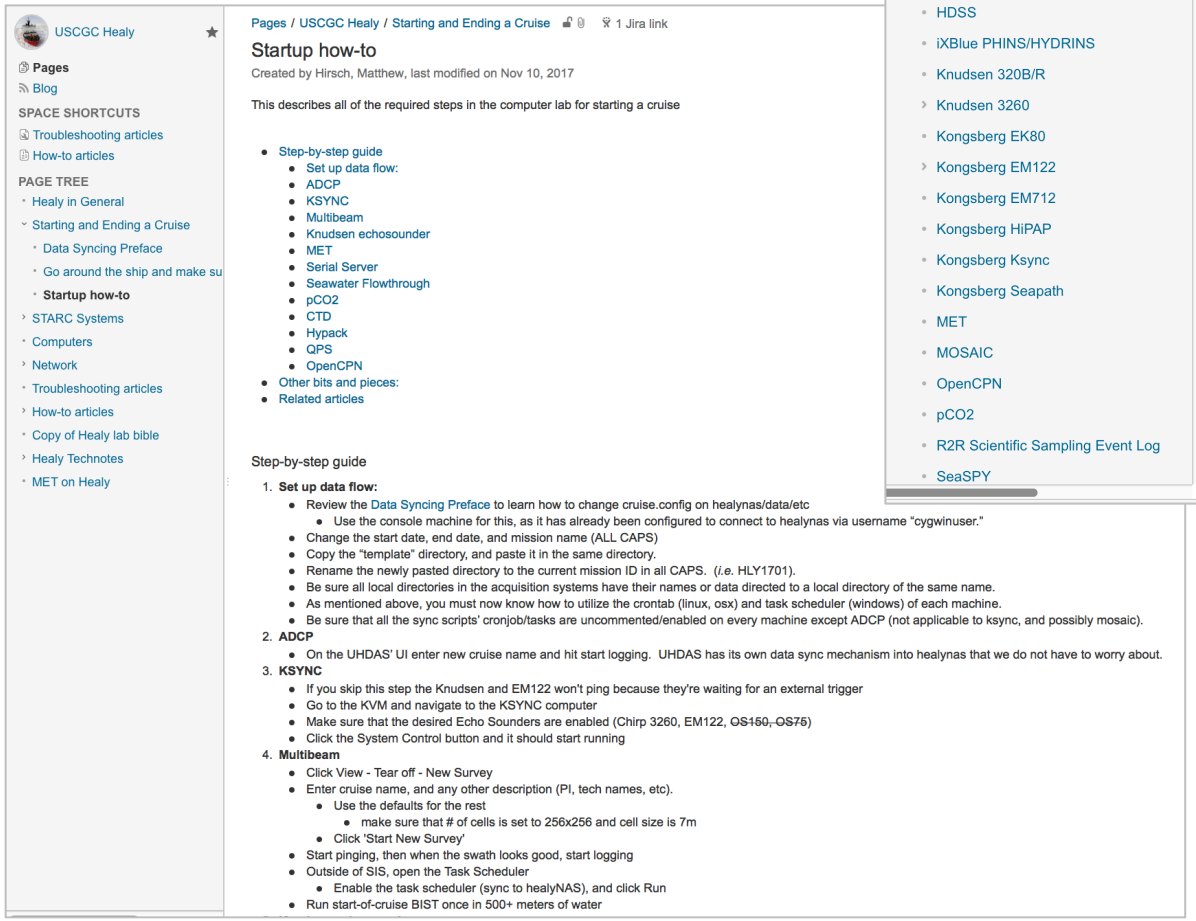
- UPS Battery Checks
- Multibeam filter cleaning
- Acquisition Computer disk checks

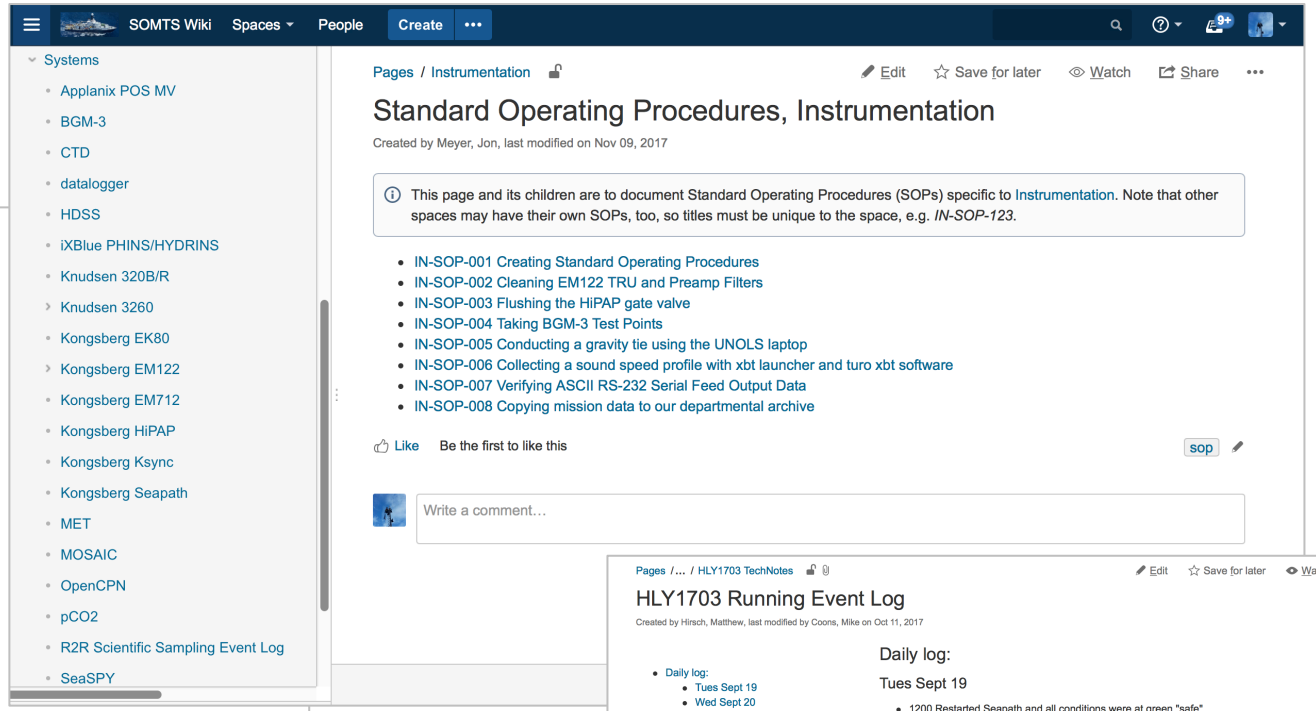
Atlassian : Confluence

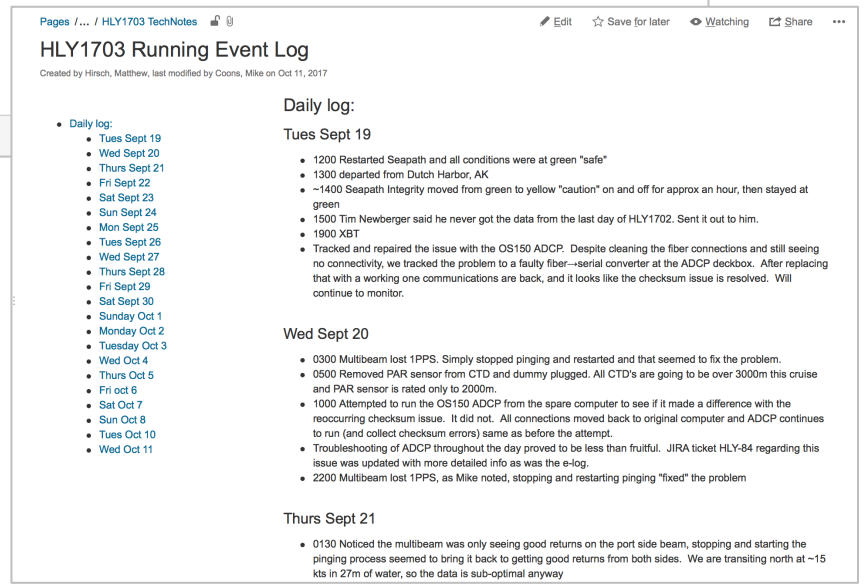
Wiki Style - Knowledge Base software

- Source of Truth
- Easy Sharing and Collaboration, Exportable
- Revision Control and History
  - Permissions and user roles
- Single Source – editable by all
  - Eliminates need to update info in multiple locations
- Compatibility with other cloud based tools
  - Google Drive, LucidChart, Slack Chat, etc
- More creative uses coming in future…
  - Public facing pages… link to icefloe?
  - Weekly Report posting
  - Daily Tech Blog

Standard Operating Procedures







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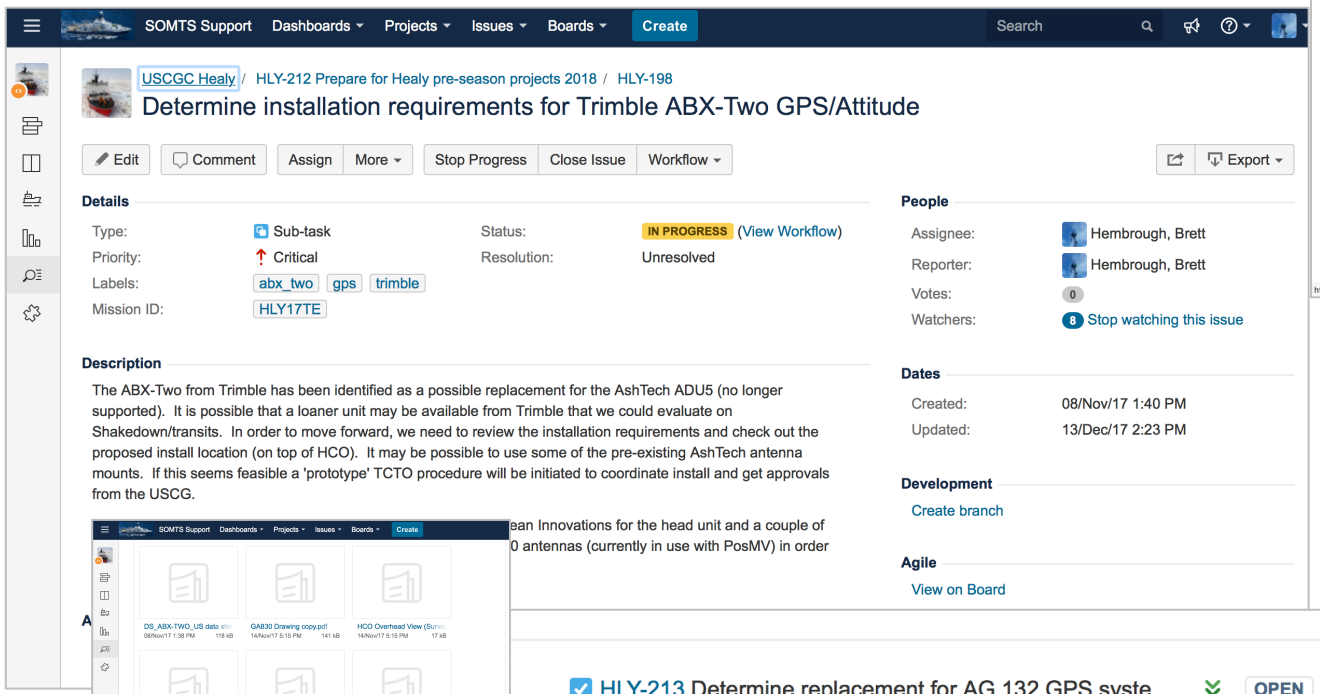
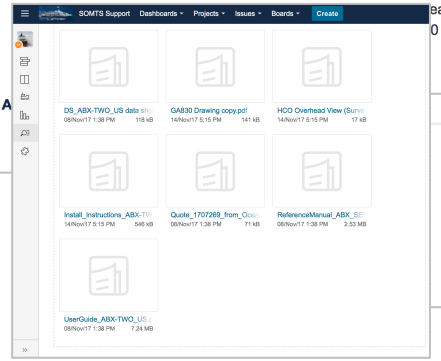
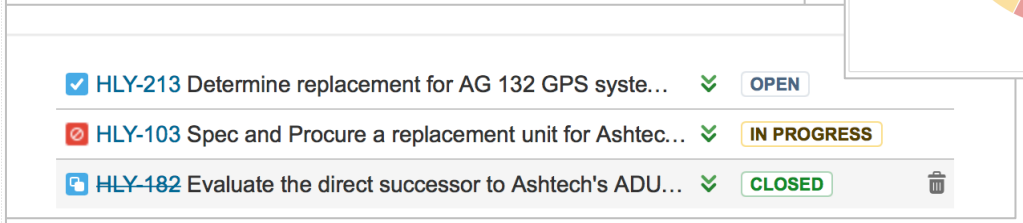
Atlassian : Jira

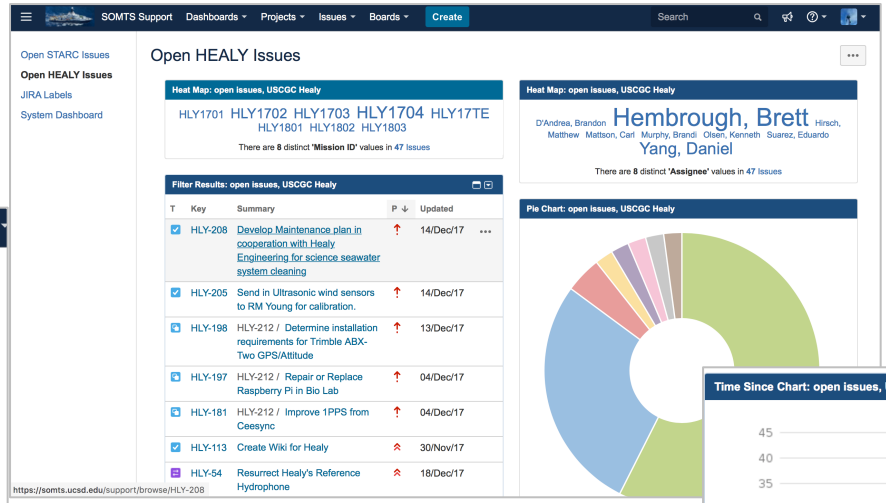
- Ticket Tracking software w/ email notification
  - Used in many industries, customizable to STARC needs
  - Tells a story and tracks project progress
  - Set deadlines, reminders, assign tasks, importance
- Shareable across institutions
  - Email access even at high latitudes
    - Subject line title will link with ticket number (HLY-149)
  - Notifications for ticket creation, changes, closing
  - Supervisors able to follow along and provide real time guidance and feedback.
- Searchable database
  - Links to similar and/or related tickets
  - Generate Reports (completed vs in-progress)
    - Performance Metrics

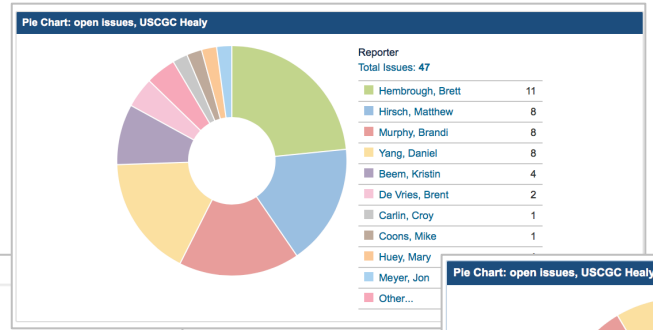
Ticket Tracking

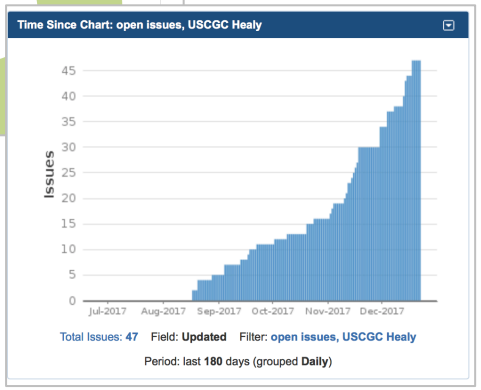


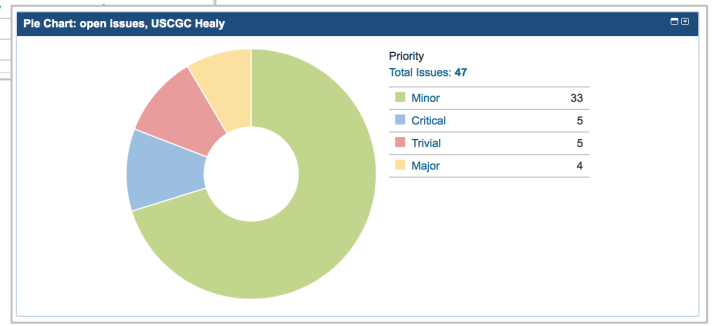












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Pre-Season Projects

- Annual Calibrations and standard maintenance
- Uninterrupted Power Supply Updates
  - RMA, New Batteries for all, 2x new units (AftCon, Comp Lab)
  - Inventory and maintenance spreadsheet developed
- Completed Diagramming
  - Wire tracing and Fiber Optic testing
- Fiber Optic Cleaning and Repair
  - Inspection Scope and cleaning supplies
  - Field Termination kit
- New Servers in Computer Lab x10
  - Updated OS and software
  - Lifespan replacements
  - Better processing power
  - New capabilities – QPS (Qinsy, Qimera, Fledermaus)
- K-Sync re-established

Pre-Season Projects

- CTD Rosette and Bottles prepped
  - Complete Niskin bottle sets (24 primary, 24 back-up, ~6 spares)
  - Cap, vent, spigot, and spring replacements as necessary
  - New O-rings throughout
- MET
  - Improved weatherproofing of Wind Sensors (only 1 failure all season)
  - Installed new Relative Humidity sensor for evaluation (less susceptible to freezing)
  - New wire run on forward Jack Staff, more robust install on gooseneck
- Dedicated 1PPS feed added - Ceesync
- Gravimeter Platform and spares sent for evaluation
- PCO2 site visit and new gas cylinders installed
- Winch Re-Spooling (9/16th, .680, .322 wires)
  - STARC involved as liaison
  - New wire logs started, coordination between STARC and HEALY Deck dept.

Pre-Season Projects

- Preparation for MAC visit

  Documentation gathering and survey verification, coordination w/ Kongsberg
  PosMV antenna mount re- measured and verified
  New IMU (v5) offsets updated (phase center based on height of sensor)
  Seapath MRU sent for calibration

- Preparation for JMS Inspection

  Winch/wire terminations, slip ring service and re-install
  Coordination with Coast Guard MSTs
  - Welcome Aboard binder and Lab Layout drawings
  - Fume Hood certifications
  - Equipment Preparations
  - Improved installation for XBT launcher

NSF Project Updates

Forward Science Vans

- Electrical completed w/ enclosure boxes
- Potable and Seawater connections completed
- Next phase = communications, alarms, network, etc

12kHz Transducer replacement

- Lifespan replacement for Knudsen echosounder
- Equipment purchased, delivered, awaiting install opportunity
- Transducer void access gained in Dec 2017 to assist in work planning
- Healy has plans to replace ice windows and gaskets in dry dock 2019
  STARC planning to install new transducer at this time.

Cruise Planning 2017

Icefloe.net content updates

- Small boat / dry suit requirements
- Ice –Ops policy
- Contact info, etc

Cruise Planning Telecon Agenda refined per AICC comments

- In addition to Cruise Planning form (mirrors topics)
- Allows for more detailed discussion and note taking
- Modeled after successful Cruise Planning template used at SIO
- Coordination with Coast Guard MSTs

Shakedown May 16-23

Underway with:

Multibeam Advisory Committee ~3 days

Paul Johnson and Vicki Ferrini
Kongsberg Technician – Tony Dalheim

UHDAS

Jules Hummon – new computer install, updated OS

- Ongoing noise troubleshooting – deck unit relocation

JMS Inspection ~ 2.5 days

Ted Colburn
Science spaces, equipment, and over-boarding gear

SIO 5x techs, OSU 2x techs

Training for 2017 field season and beyond
24hr watch standing during MAC operations

USCGC HEALY (WAGB 20) Shakedown 2017 Schedule

Version: 1.0

		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Monday	15-May	Inport																								
Tuesday	16-May	Inport										Underway														
												Transit to Patch Test Site														
												CBL Recovery / Drills / PosMV & SeaPath Calibration														
Wednesday	17-May	Underway																								
		Transit to Patch Test Site																Multibeam Testing								
		Drills / Training																								
Thursday	18-May	Underway																								
		Multibeam Testing																								
		Drills / Training																								
Friday	19-May	Underway																								
		Multibeam Testing																						Transit		
		Drills / Training																								
Saturday	20-May	Underway																								
		Power Trials						Transit						Anchored (Port Angeles, WA)												
													Pax Transfer					JMS Inspection (Pierside Elements)							
Sunday	21-May	Underway																								
		JMS Inspection (Underway Elements) / Flight Operations																								
Monday	22-May	Underway																								
		JMS Inspection (Underway Elements) / Flight Operations																								
Tuesday	23-May	Underway																								
		Engineering Testing																								
Wednesday	24-May	Underway																Inport								
Thursday	25-May	Inport																								
Friday	26-May	Inport																								
Saturday	27-May	Inport																								
Sunday	28-May	Inport																								

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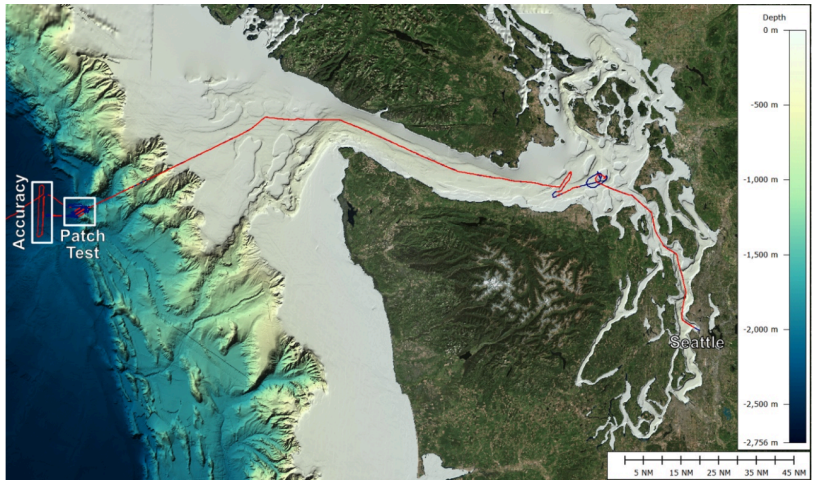
Multibeam Advisory Committee

EM122 Calibration and Verification Tests

- Verify sensor installation and system geometry
- Patch Test (SeaPath and PosMV)
- Pitch and Latency Lines
- Roll Lines

Noise Testing

- Self Noise vs. RPM
- Machinery Diagnostics



Swath Width

- Extinction Plot – (shallow > deep and deep > shallow)
- On approach to Hawaii – pending analysis

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Multibeam Advisory Committee

Full report now available

- No major issues with sensors or latency

  BISTs indicate system is within spec, however, some elements are at the edge of acceptable tolerances (one notable outlier observed)- requires ongoing monitoring

- Swath width is roughly 5x water depth @ ~750m, reduces to 4x @ ~2600m

Healy suffers from elevated noise levels

- Impacting swath width and standard deviation of soundings.

  Continue Power Plant configuration analysis

  More advanced testing needed- Gates Acoustics?

USCGC *Healy* EM122
Multibeam Echosounder System Review
May 16-20, 2017

Report prepared by:
Paul D. Johnson [1], Vicki L. Ferrini [1,2], and Kevin W. Jerram [1]

[1] University of New Hampshire – Center for Coastal and Ocean Mapping / Joint Hydrographic Center
[2] Columbia University – Lamont-Doherty Earth Observatory

This work was supported by the National Science Foundation under grant no. 1524585.

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Noise Levels

- Last assessed in 2014 – Gates Acoustics
  - Known sources/configurations were tested again
    - Boiler feed pumps, potable water pumps, main sea water pumps, aux generator pumps, fire pumps
    - Bridge echosounder (fathometer)
    - Speed logger
  - Swath width > 60 degrees shows a reduction of 5-10 degrees compared to typical EM122 coverage at same depth
    - Possibly noise related

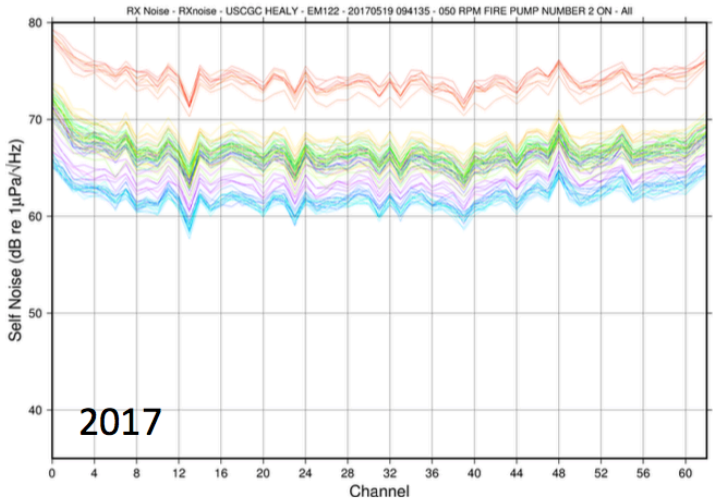


Figure 13. Noise levels perceived by the EM122 receiver under different machinery configurations. Individual test results are presented in Appendix 4.

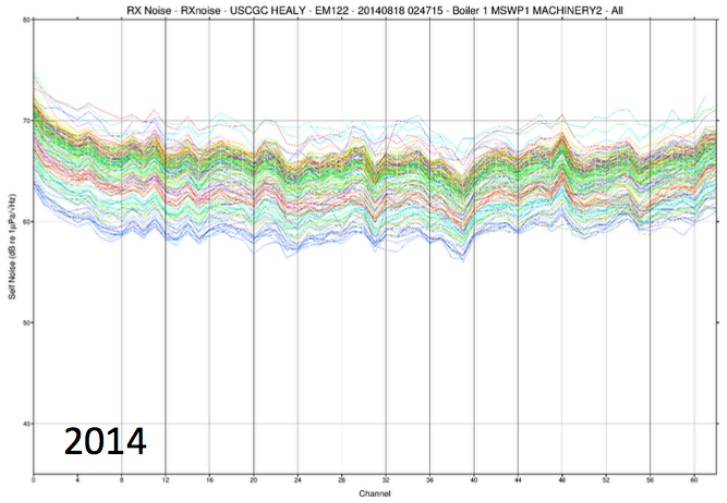


Figure 14. Noise levels perceived by the EM122 receiver under different machinery configurations. This data was collected in 2014 by Gates Acoustic. Individual test results are presented in Appendix 4.

JMS Inspection

Preliminary and Full Report Available

Overall Healy scored “**Very Good**” or ”**Good**” in all inspected areas.

Over-boarding Equipment

Winches

- RVSS Appendix A – Factor of Safety 5.0
  - Develop Extenuation Circumstance Plan vs. GAR
  - Level-wind Rollers (.322)
  - Tension monitoring tolerances

Cranes

- Tested under load
  - Operated safely (alarms and indicators fucntioned properly)

VESSEL INSPECTION REPORT

USCGC HEALY (WAGB 20)

20 – 22 May 2017

prepared for:

NATIONAL SCIENCE FOUNDATION
4201 Wilson Boulevard • Arlington, VA 22230

prepared by:

JMS NAVAL ARCHITECTS
Naval Architecture
Marine Engineering
Marine Surveying
Salvage Engineering

70 Essex Street • Mystic, CT 06355
[860] 536-0009 • http://www.jmsnet.com • jms@jmsnet.com

UC San Diego

JMS Inspection

Scientific Outfitting and Facilities

Scored "**Very Good**"

"All systems tested appeared to operate properly including the EM 122 Multibeam system, the Knudsen 3260 Chirp echosounder at 3.5 and 12 kHz, the flow through seawater system with associated sensors, the XBT system, both DI clean waters systems, the gravimeter, and the meteorological sensor system."

"There appears to be an excellent program established to identify and document science related cabling in the labs and an initiative to remove unused cabling."

Areas to Improve

- Laboratory Lighting
- Labeling of HazMat locations and sink drainage (addressed by MSTs)
- Dedicated Li Battery storage location

Mobilization

Seattle: Majority of science equipment loaded

Honolulu: Some items for RDC picked up (drifters, etc)

Seward: HLY1701 – RDC gear loaded and set-up

Dutch Harbor: HLY1703 and 1704 deck equipment swaps

HLY 1701 – RDC

Chief Scientist – Scot Tripp

July 21 – Aug 11

- Diving Ops

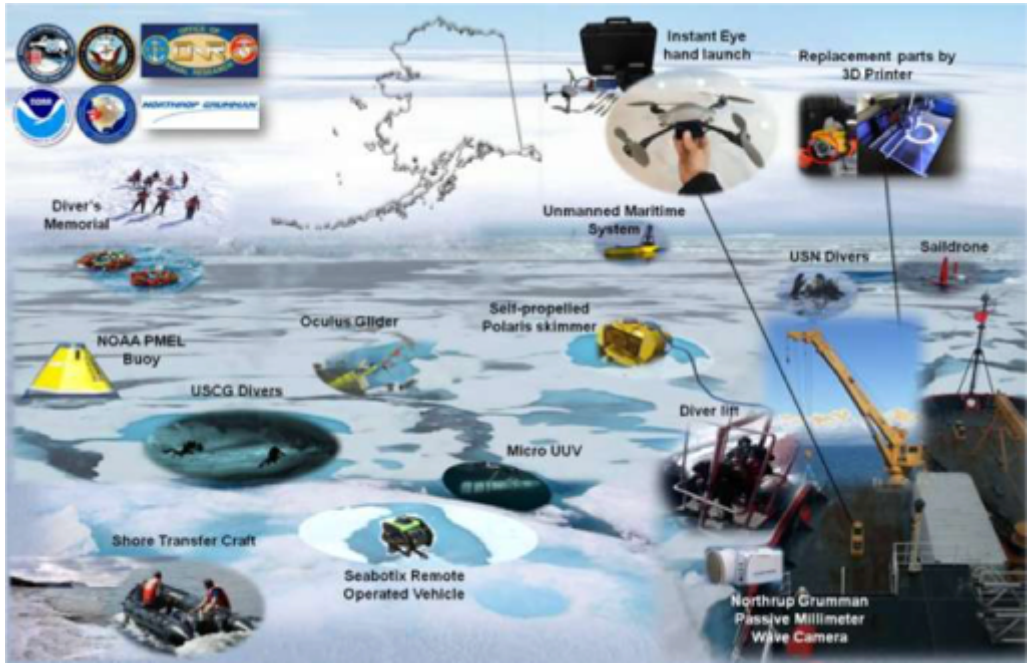
  Re-establish diving capability on Healy

- F/V Destination

  Multibeam Mapping of wreck site

  New QPS Software used to design survey and drag for crab pot

- UAV/AUV and ROV Ops
- Oil Skimmer testing
- Moorings



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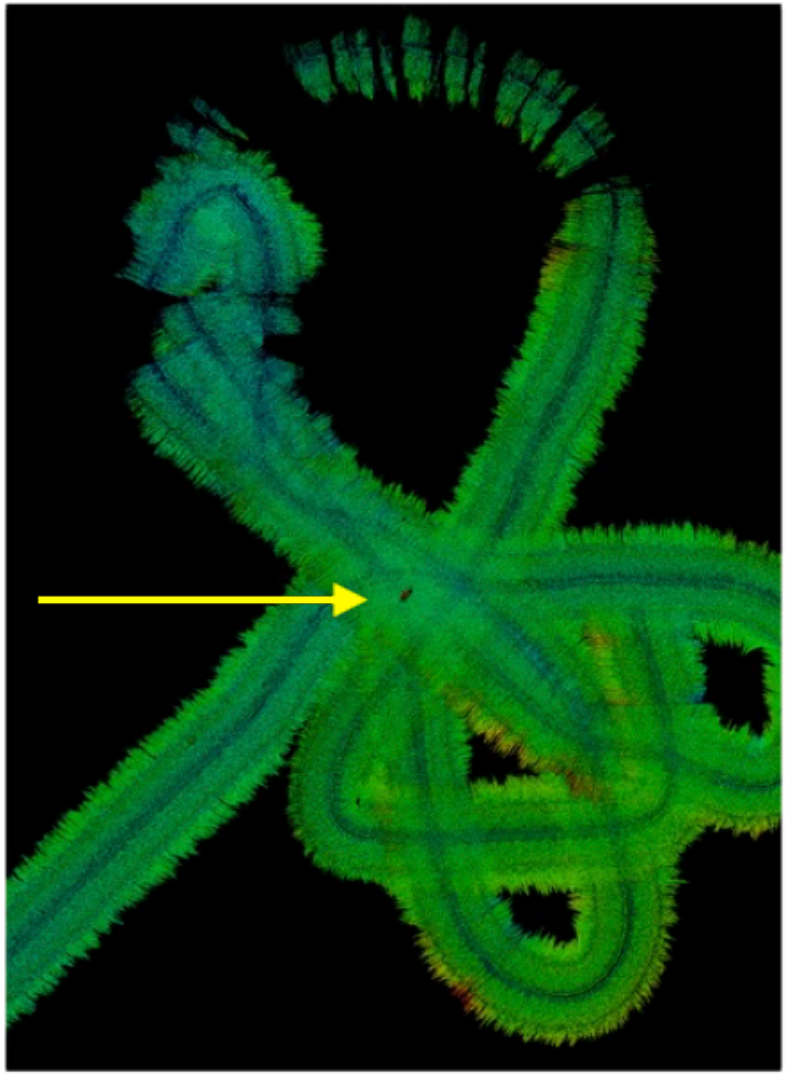
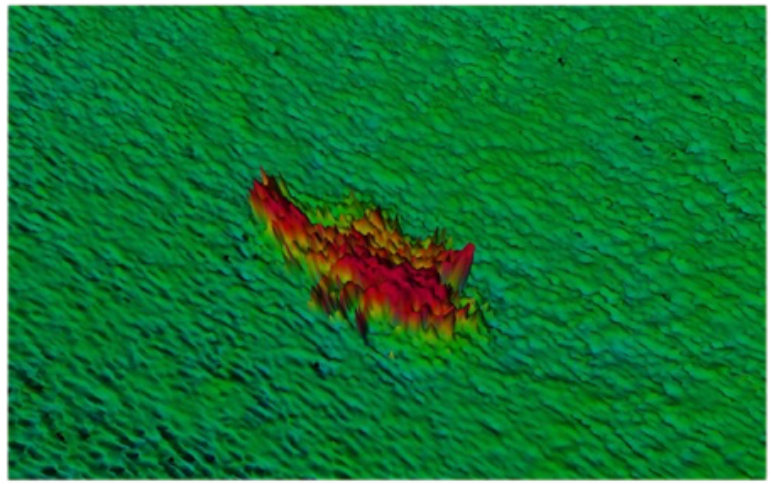
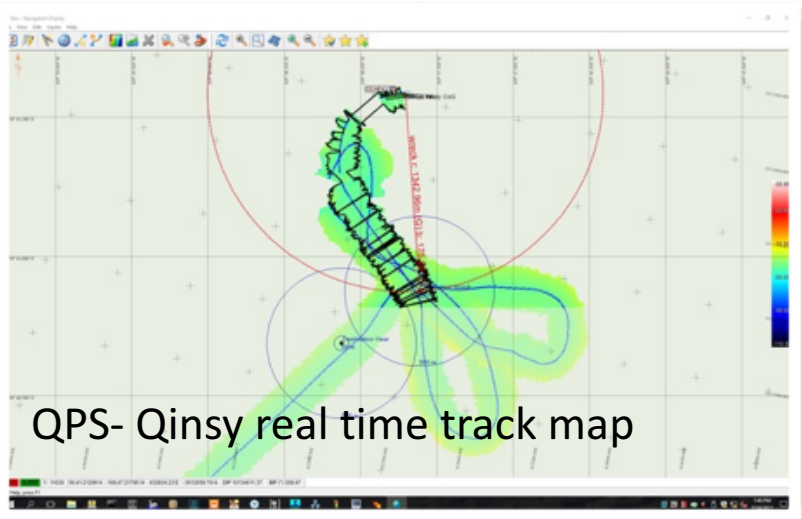
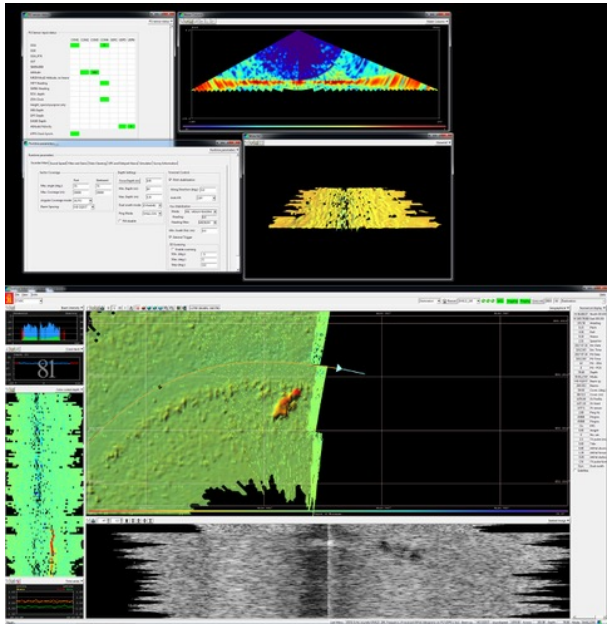
F/V Destination Survey







QPS- Qinsy real time track map



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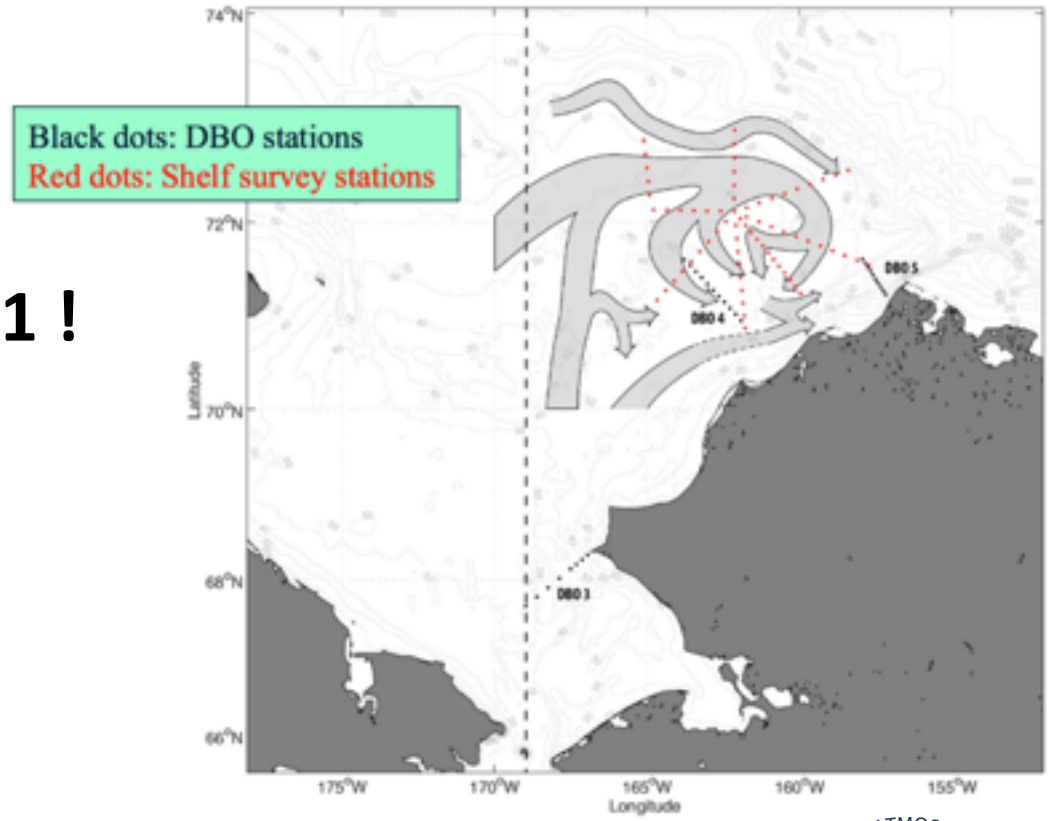
HLY1702 - DBO

Chief Scientist – Bob Pickart

Aug 26 – Sept 14

- CTD Ops
  - 100 planned stations, completed **141 !**
- Coring and Grabs
  - HAPS, Multi-HAPS, Van Veen
- Bongo Net Tows – NOAA
- Water Chemistry
- Underway Deployments
  - Up-Temp, Pop-up buoys



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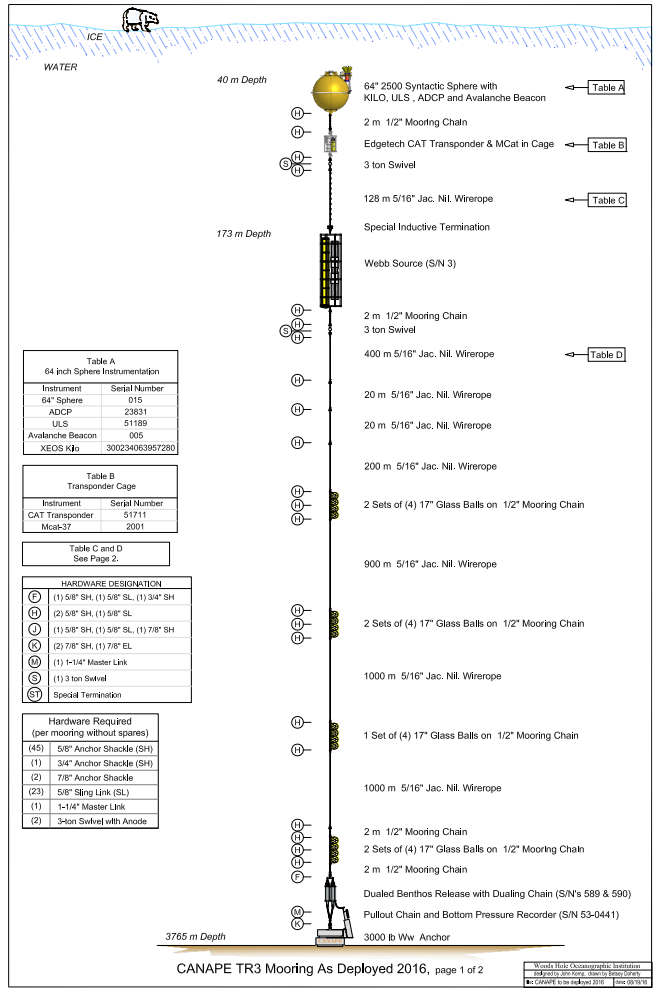
HLY1703 – CANAPE - Deep

Chief Scientist - Peter Worcester

Sept 19 – Oct 13 (early arrival on 11th)

- Mooring & Source Recoveries
  - Including Moorings for HLY1704
- CTDs
  - Usually two per mooring site
- Gliders
- Sub-bottom Echosounder Surveys
  - Head start on HLY1704 objectives
  - STARC assisted throughout entire survey
- Multibeam Surveys



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HLY1704 – CANAPE - Shallow

Chief Scientist – Mohsen Badiey
Oct 17 – Nov 10

- Mooring Recoveries
  - Some difficulties with releases
  - Dragging Ops
- CTD Survey
  - Additional science sensors installed
  - Cold temps – heater on deck
- Multibeam and Echosounder transects
  - STARC highly involved (11 transects)
- Small boat ops in ice – Acoustics
- 11x Gravity Cores – with Acoustic sensors

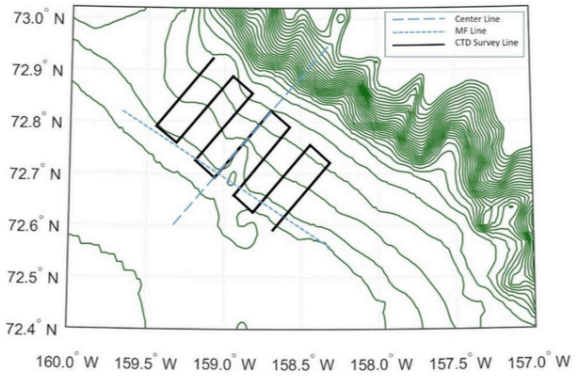


Figure 28. Proposed CTD survey lines for HLY1704.

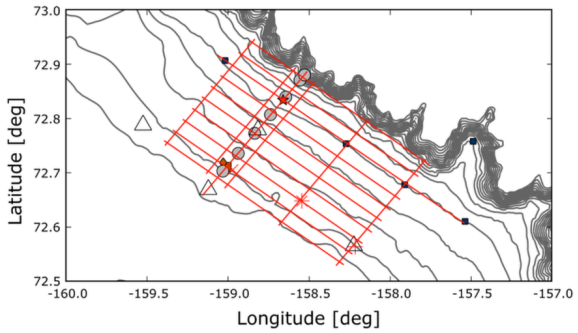
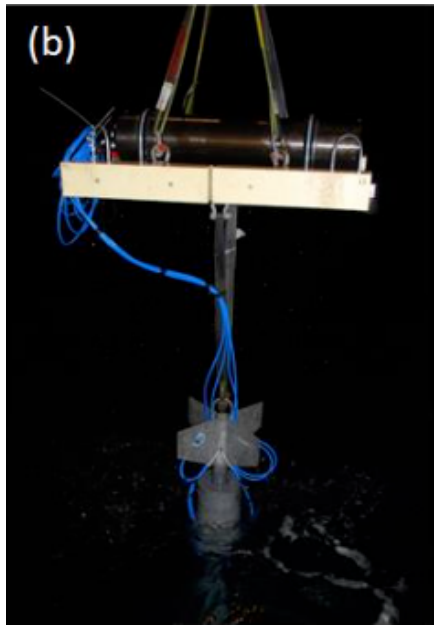
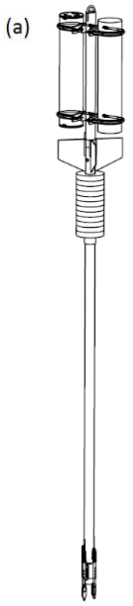


Figure 24. Proposed tracks for sub-bottom survey during HLY1704.





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End of Season

- Sensors sent for calibration and repair
- SSW system flushed and secured

  Discussions with Healy engineering for full system flush in progress

- Dockside maintenance period prep and planning
- Improvements to HCO antenna mounts (in progress)

Map Server

Action Plan:

- ✓ Evaluate Mapserver features and identify highest priority functions for science users

  AICC provided input regarding desired capabilities, Coordination with Coast Guard for bridge navigational needs (ice imagery display)

- ✓ Investigate and identify commercially supported software which may be able to replace core functions of Mapserver (Hypack, QPS-Qinsy, OpenCPN)
- ✓ Install, configure and test software aboard USCG Healy
- ✓ Evaluate software while underway to determine stability and capability
- ✓ Train technicians on use of software and develop SOPs for science missions
- ✓ Gather feedback from technicians and science users
- ✓ Communicate successes and challenges to the UNOLS research fleet at large and work to establish a collaboration that may be used on multiple platforms.
  - ✓ Discussions with Sikuliaq to collaborate on development of “Mapserver 2”
  - ✓ RCRV (OSU)is developing similar product….combine efforts ?

Map Server - Alternatives

QPS- Qinsy

- Experimental use in 2017
  Implemented after departure from Seattle – short learning window
- On site training by QPS in Seward prior to HLY1702 (4 days)
- Includes Qimera and Fledermaus (available to Science)
- Available as situational awareness tool and real time date for Bridge
  - Valuable planning tool for HLY1701 F/V Destination survey and salvage.
  - All stations and work site for each cruise displayed

Open CPN

- Secondary situational awareness.
  Track line, stations, ETA, watch circle, charts,etc

HyPack

- Light use in 2017
- Alternative to Qinsy
- Also able to be used as real time display for Bridge
  Ice Imagery capability still being evaluated

Map Server

Next Steps:

- ❑ Continue collaborative effort with UAF – Sikuliaq during joint cruise – SODA HLY1802
- ❑ Install hardware needed to run Mapserver on Healy (replace archaic original equip)

For 2018 season will continue to run with combined package of Qinsy, Hypack, and Open CPN

- ❑ Build database shore side
- ❑ Experiment with bringing in additional data streams
  - May need GIS style tools to combine ice images
- ❑ Higher level training for technicians

Icefloe.net

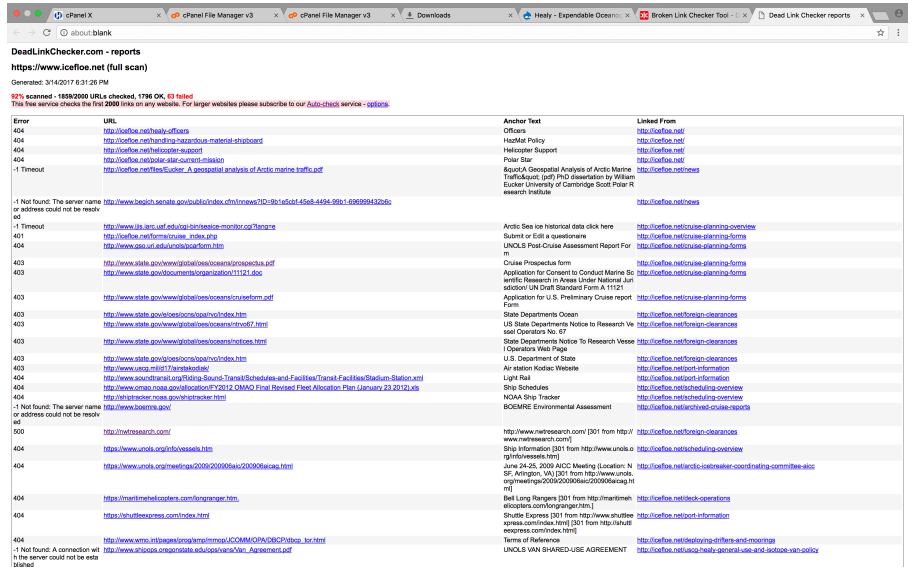
ActionPlan:

- ✓ Website audit and report by 3rd party web developer
  - Include recommended steps and options to maintain/upgrade or migrate
- ✓ Back-up current version of Icefloe.net website
- ✓ Create offline version of website locally and use as test sandbox
- ✓ Immediately bring website up to minimum acceptable security standards (SSL)
- ✓ Offline website updated to version 7.56 of Drupal
- ✓ Upgrade offline version of website to latest Drupal Modules, test for stability
- ✓ Correct content errors and address user complaints (case by case basis)
- ❑ Fix broken links, ship track-lines, and aloft-con imagery
  - Partially complete
- ❑ Improve user experience with new/modern theme.
- ❑ Improve Mobile / Tablet functionality
- ❑ Address Cruise Planning Form problems. (UNOLS Cruise Planning Portal?)
- ❑ Update content links – USCG Mission Blog, USCG Healy site, Confluence Wiki, etc

Icefloe.net

Dead Link Checker

- Most *external* links are no longer active
- Some *internal* links are no longer pointing to correct locations
- Clean-up is underway – done manually, very tedious work need to check each link individually



DeadLinkChecker.com - reports

https://www.icefloe.net (full scan)

Generated: 3/14/2017 6:31:26 PM

92% scanned - 1859/2000 URLs checked, 1796 OK, 63 failed

This free service checks the first 2000 links on any website. For larger websites please subscribe to our Auto-check service - options.

Error	URL	Anchor Text	Linked From
404	http://icefloe.net/healy-officers	Officers	http://icefloe.net/
404	http://icefloe.net/handling-hazardous-material-shipboard	HazMat Policy	http://icefloe.net/
404	http://icefloe.net/helicopter-support	Helicopter Support	http://icefloe.net/
404	http://icefloe.net/polar-star-current-mission	Polar Star	http://icefloe.net/
-1 Timeout	http://icefloe.net/files/Eucker_A geospatial analysis of Arctic marine traffic.pdf	"A Geospatial Analysis of Arctic Marine Traffic" (pdf) PhD dissertation by William Eucker University of Cambridge Scott Polar Research Institute	http://icefloe.net/news
-1 Not found: The server name or address could not be resolved	http://www.begich.senate.gov/public/index.cfm/innews?ID=9b1e5cbf-45e8-4494-99b1-696999432b6c		http://icefloe.net/news
-1 Timeout	http://www.ijis.iarc.uaf.edu/cgi-bin/seaice-monitor.cgi?langme	Arctic Sea ice historical data click here	http://icefloe.net/cruise-planning-overview
401	http://icefloe.net/forms/cruise_index.php	Submit or Edit a questionaire	http://icefloe.net/cruise-planning-forms
404	http://www.gso.uri.edu/unols/pcarform.htm	UNOLS Post-Cruise Assessment Report Form	http://icefloe.net/cruise-planning-forms
403	http://www.state.gov/www/global/oes/oceans/prospectus.pdf	Cruise Prospectus form	http://icefloe.net/cruise-planning-forms
403	http://www.state.gov/documents/organization/11121.doc	Application for Consent to Conduct Marine Scientific Research in Areas Under National Jurisdiction/ UN Draft Standard Form A 11121	http://icefloe.net/cruise-planning-forms
403	http://www.state.gov/www/global/oes/oceans/cruiseform.pdf	Application for U.S. Preliminary Cruise report Form	http://icefloe.net/cruise-planning-forms
403	http://www.state.gov/e/oes/ocns/opa/vo/index.htm	State Departments Ocean	http://icefloe.net/foreign-clearances
403	http://www.state.gov/www/global/oes/oceans/ntvo67.html	US State Departments Notice to Research Vessel Operators No. 67	http://icefloe.net/foreign-clearances
403	http://www.state.gov/www/global/oes/oceans/notices.html	State Departments Notice To Research Vessel Operators Web Page	http://icefloe.net/foreign-clearances
403	http://www.state.gov/e/oes/ocns/opa/vo/index.htm	U.S. Department of State	http://icefloe.net/foreign-clearances
403	http://www.uscg.mil/d17/anniakodiak/	Air station Kodiac Website	http://icefloe.net/port-information
404	http://www.soundtransit.org/Riding-Sound-Transit/Schedules-and-Facilities/Transit-Facilities/Stadium-Station.xml	Light Rail	http://icefloe.net/port-information
404	http://www.omao.noaa.gov/allocation/FY2012 OMAO Final Revised Fleet Allocation Plan (January 23 2012).xls	Ship Schedules	http://icefloe.net/scheduling-overview
404	http://shiptracker.noaa.gov/shiptracker.html	NOAA Ship Tracker	http://icefloe.net/scheduling-overview
-1 Not found: The server name or address could not be resolved	http://www.boemre.gov/	BOEMRE Environmental Assessment	http://icefloe.net/archived-cruise-reports
500	http://nwtresearch.com/	http://www.nwtresearch.com/ [301 from http://www.nwtresearch.com/]	http://icefloe.net/foreign-clearances
404	https://www.unols.org/rrb/vessels.htm	Ship Information [301 from http://www.unols.org/rrb/vessels.html]	http://icefloe.net/scheduling-overview
404	https://www.unols.org/meetings/2009/200906aicc/200906aicag.html	June 24-25, 2009 AICC Meeting (Location: NSF, Arlington, VA) [301 from http://www.unols.org/meetings/2009/200906aicc/200906aicag.html]	http://icefloe.net/arctic-icebreaker-coordinating-committee-aicc
404	https://maritimehelicopters.com/longranger.htm,	Bell Long Rangers [301 from http://maritimehelicopters.com/longranger.htm,]	http://icefloe.net/deck-operations
404	https://shuttleexpress.com/index.html	Shuttle Express [301 from http://www.shuttleexpress.com/index.html] [301 from http://shuttleexpress.com/index.html]	http://icefloe.net/port-information
404	http://www.wmo.int/pages/prog/amp/mmop/JCOMM/OPA/DBCP/dbcp_lor.html	Terms of Reference	http://icefloe.net/deploying-drifters-and-moorings
-1 Not found: A connection with the server could not be established	http://www.shipops.oregonstate.edu/ops/vans/Van_Agreement.pdf	UNOLS VAN SHARED-USE AGREEMENT	http://icefloe.net/uscg-healy-general-use-and-isotope-van-policy

Ties into identifying scope and scale of icefloe.net, determining what is relevant vs. archival. Overall goal of the site?

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Icefloe.net – Back up and Updates

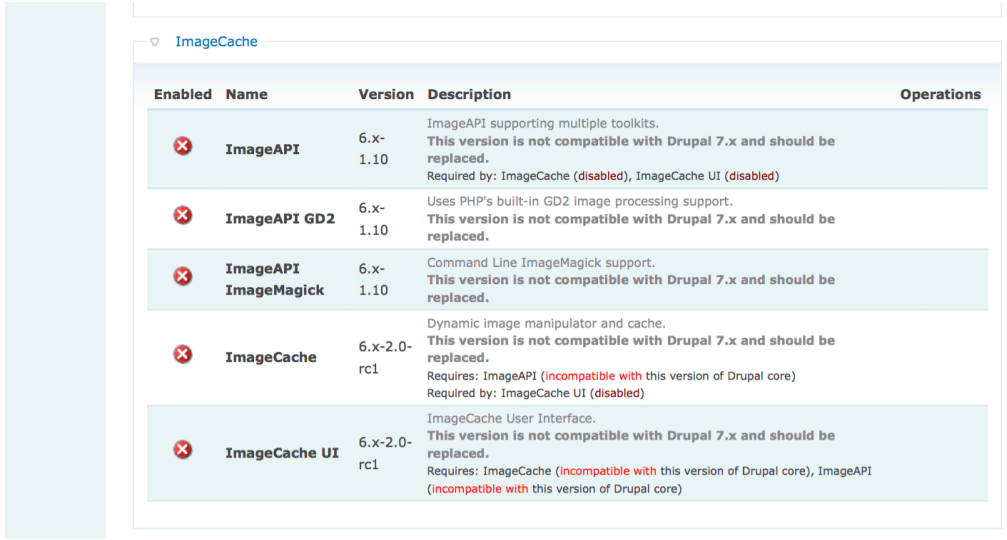
Backed up original site and data

- Update from Drupal core 6.28 to 7.56 is a major update

  Most broken features are due to out of date modules or version incompatibility

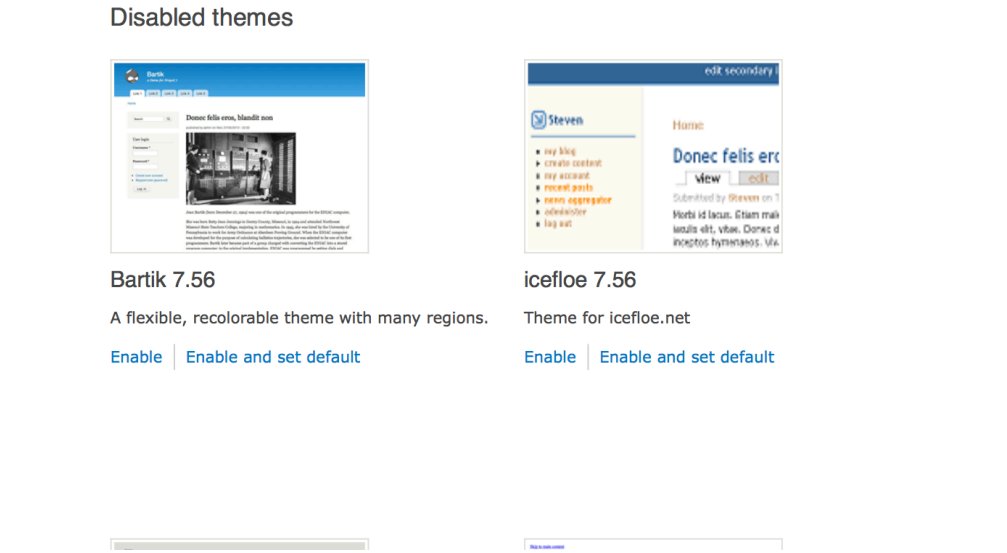
- Current theme is not compatible with new version – trying to overhaul theme to function with core upgrade is running into problems

  Or…. choose new theme altogether?



ImageCache

Enabled	Name	Version	Description	Operations
✗	**ImageAPI**	6.x-1.10	ImageAPI supporting multiple toolkits. **This version is not compatible with Drupal 7.x and should be replaced.** Required by: ImageCache (disabled), ImageCache UI (disabled)	
✗	**ImageAPI GD2**	6.x-1.10	Uses PHP's built-in GD2 image processing support. **This version is not compatible with Drupal 7.x and should be replaced.**	
✗	**ImageAPI ImageMagick**	6.x-1.10	Command Line ImageMagick support. **This version is not compatible with Drupal 7.x and should be replaced.**	
✗	**ImageCache**	6.x-2.0-rc1	Dynamic image manipulator and cache. **This version is not compatible with Drupal 7.x and should be replaced.** Requires: ImageAPI (incompatible with this version of Drupal core) Required by: ImageCache UI (disabled)	
✗	**ImageCache UI**	6.x-2.0-rc1	ImageCache User Interface. **This version is not compatible with Drupal 7.x and should be replaced.** Requires: ImageCache (incompatible with this version of Drupal core), ImageAPI (incompatible with this version of Drupal core)	



Disabled themes

Bartik 7.56

A flexible, recolorable theme with many regions.

Enable | Enable and set default

icefloe 7.56

Theme for icefloe.net

Enable | Enable and set default

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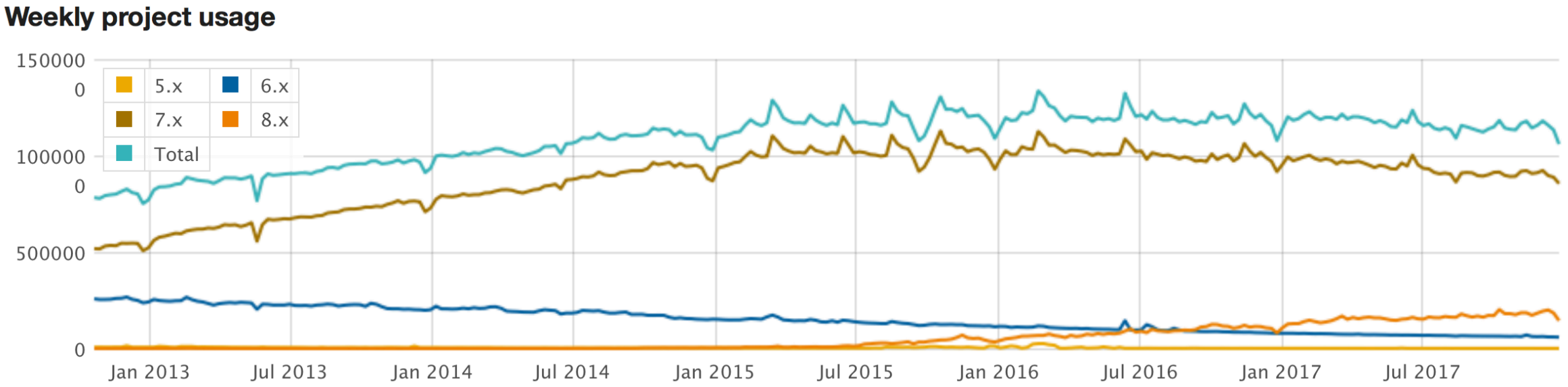
Icefloe.net

https://www.drupal.org/project/usage/drupal



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Icefloe.net

Summary and Next Steps:

Firm understanding of the barriers to update, continue to build and test offline site, getting closer to stable version.

- ❑ Identify scope and scale of icefloe.net going forward
  - Requesting input from USCG, NSF and AICC
- ❑ Evaluate UNOLS Cruise Planning Portal
- ❑ Theme preferences – colors, feel, layout?
  - Info centric vs. imagery?
  - Wiki style ?
- ❑ Demo updated site to USCG /community, and receive feedback
- ❑ Implement any requested changes
- ❑ Pick a time to publish updated site? Not to interrupt cruise planning season

Define site maintenance vs. higher level development efforts

- At a minimum needs to be considered annually (security, updates, etc)

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Multibeam

Action Plan:

- ✓ Impedance testing for all TX/RX transducers and Kongsberg review of results
- ✓ On site Kongsberg technician support- dockside ship visit and underway time
- ✓ UPS (Uninterrupted Power Supply) sent to manufacturer for repair and new batteries
- ✓ Routine maintenance conducted prior to getting underway for Shakedown
- ✓ Fiber Optic and Serial connections traced, serviced, verified, and documented.
- ✓ UNOLS Multibeam Advisory Committee aboard to assess performance of system
- ✓ Update Sound Velocity Profile Software and verify transfer of data to multibeam
- ✓ BIST (Built in Self Test) conducted weekly to accumulate season long history

Multibeam

Summary and Next Steps

- Overall the health of system is ‘within spec’ although may be showing symptoms of degradation.
- Noise is still high concern.
  - Work with Healy engineering to diagnose.

- ❑ Use impedance analyzer for high latitude testing (SIO owned)
- ❑ Continue BIST regimen
- ❑ Visual Inspection during Dry Dock 2019
  Coordinate with Kongsberg
- ❑ Continue discussions with MAC – deep swath
- ❑ Noise Assessment – Gates Acoustic (after DryDock)

2018 Plans

Identified Projects so far….

- Ash Tech replacement (Trimble ABX-Two)
- AG132 replacement
- Antenna Verification Survey (dockside)
- Computer lab UPS – networking
- Computing Cluster – Mapserver, network monitoring
- Chirp 3260 Deck Unit
- New Milli-Q
- Resolve intermittent scoreboard problems
- Reference Hydrophone Equipment

Dry Dock 2019

Currently in late planning stages

STARC is participating in meetings with USCG

Projects under discussion:

- 12kHZ Transducer Replacement
- EM122 Inspection
- Bow Kickpipes
- Formal instrument and antenna survey
- Fiber Optic Upgrades

Questions for AICC

Data Access Policy

- Policy for making data available to 3rd party users (Gravimeter, PCO2, science party onboard)

Icefloe scope and scale

- Prioritized discussion relating to site features, intent, design, and content
- Develop support model to keep pace with security standards and software releases

Questions for STARC ?

Thank You