

STARC : AICC Report

June 2017

Pre-Season, Dockside, Shakedown

PRESEASON : GENERAL

- STARC TECHS SPENT ROUGHLY 2 WEEKS PER MONTH JAN – MAY ABOARD HEALY
 - INCLUDING UNDERWAY TIME JAN 2017 – MULTIBEAM EVALUATION
- ALL FRESHLY CALIBRATED MET AND SCIENCE SEA WATER SENSORS REINSTALLED
 - REPAIRS AND IMPROVEMENTS MADE TO FORWARD JACK-STAFF INSTALLATION
- CRUISE PLANNING TELECONS FOR EACH SCIENCE MISSION HELD
 - UTILIZED NEW 'CRUISE PLANNING TELECON AGENDA' FORMAT
 - SUPPLEMENT TO CRUISE PLANNING MATERIAL ON ICEFLOE.NET
 - ALLOWS FOR MORE DETAILED EXPLANATION OF OPERATIONS AND COAST GUARD POLICIES
- VAN RELOCATION PROJECT COMPLETED – WATER SERVICES INSTALLED
- DOCUMENTATION AND DIAGRAM PROJECT INITIATED
- ONGOING ORGANIZATION AND INVENTORY OF STARC EQUIPMENT, CONSUMABLES, SPARES

SCIENCE SYSTEMS

MET

- NEW WIRE RUN ON FORWARD JACKSTAFF
- NEW PRIMARY AND SPARE COMPUTERS
 - UPDATED ACQUISITION SOFTWARE
- NEW HUMIDITY SENSOR
- ADDITIONAL SPARES ACQUIRED
 - PAR, RADIOMETERS X2

SCIENCE SEA WATER

- FLUSHED AND CLEANED ALL TUBING
- OIL DETECTION FLUOROMETER INSTALLED AS PRIMARY (TURNER DESIGNS C3)
 - REQUIRED REPAIR OF OIL SENSOR
 - SUGGEST UPGRADING SPARE TURNER TO OIL DETECTION MODEL IN FUTURE

SCIENCE SYSTEMS

PCO2

- SITE VISIT BY TECHNICIAN, SYSTEM CHECK OUT
- PROVIDED TRAINING TO NEW STARC TECHS
 - UPDATED DOCUMENTATION
 - HOW TO'S, START UP/SHUT DOWN, TROUBLESHOOTING TIPS
- GAS BOTTLE REPLENISHMENT
- OPERATING ON WINDOWS XP
 - REMOVED FROM HEALY NETWORK – SECURITY REQUIREMENT
 - DATA TRANSFERRED TO DIRECTLY TO PCO2 COMPUTER OVER COPPER WIRE
 - NEEDS UPDATE TO NEWER WINDOWS OS

GRAVIMETER

- PLATFORM AND DECK UNIT SERVICED AT WHOI
 - SPARES UPDATED/REPAIRED
- REINSTALLED MAY 2017 – RANDY HERR
- SYSTEM CHECK OUT AND REPORT AVAILABLE
- IMPROVED RACK LAYOUT
 - FIXED VULNERABLE POWER CORD
- GRAVITY TIE PERFORMED
- DATA VERIFIED BY B.COAKLEY AFTER SHAKEDOWN

SCIENCE SYSTEMS

ULTRA PURE WATER MILLI Q

- 2017 SPARES PURCHASED AND ON BOARD
- NEW FILTERS INSTALLED AND TESTED
- SYSTEM CHECK BY MILLIPORE FIELD TECH
 - SMALL REPAIRS MADE – FITTINGS, TUBING
 - REPORTS AVAILABLE
- ACADEMIC MODEL (WET LAB) – NO LONGER SUPPORTED - REPLACEMENT ADVISED
- A10 ADVANTAGE (MAIN LAB) SOON TO BE SUPERSEDED BY NEWER MODEL

UNINTERRUPTIBLE POWER SUPPLIES – (UPS)

- NEW BATTERIES FOR ALL 8 EATON UPS
 - COMPUTER LAB RACKS
- REPLACED FAULTY UNIT IN AFT CON (APC)
- NEW BATTERIES INSTALLED (APC/DRS)
 - AFT CON, IC GYRO, HCO, COMPUTER LAB
- COMPLETE INVENTORY UPDATE AND MAINTENANCE SCHEDULE COMPLETED
- PORTABLE UPS TESTED AND AVAILABLE
- DEVELOPING PLAN TO ADD NETWORK MONITORING

SCIENCE SYSTEMS

KNUDSEN CHIRP 3260 ECHOSOUNDER

- NEW COMPUTER – LIFESPAN REPLACEMENT
- 2016 DISPLAY ISSUES RESOLVED
- NEW 12KHz TRANSDUCER AWAITING INSTALL
 - REQUIRES COORDINATION WITH COAST GUARD FOR 2018 DOCKSIDE OR NEXT DRY DOCK
- COMPLETE SET OF CHIRP 3260 SPARES ABOARD
- CONSIDERING SPARE 3260

ADCP - UHDAS

- OS150 DECK UNIT RELOCATED TO EVALUATE POSSIBLE EMI NOISE ISSUES
 - OS75 KEPT IN PLACE FOR COMPARISON
 - ONGOING EXPERIMENT COORDINATED WITH JULES HUMMON
- NEW PRIMARY AND SPARE COMPUTERS INSTALLED
 - VERSION 16.04 VERIFIED
- JULES HUMMON SAILED SHAKEDOWN CRUISE TO EVALUATE INSTALL AND OBSERVE NOISE EXPERIMENT
- DISCUSSING PLAN TO PERMANENTLY RELOCATE ADCP DECK UNITS TO MORE ACCESSIBLE LOCATION / RACK

SCIENCE SYSTEMS

CTD

- 2X NEW COMPUTERS – LIFESPAN REPLACEMENTS
- ALL NISKIN BOTTLES REFURBISHED AND INVENTORIED
- NEW ALTIMETER – VALEPORT VA500
- CABLES INVENTORIED AND REPLACEMENTS PURCHASED TO COMPLETE SPARES SUPPLY
- FOR 2017 SEASON, BORROWING POLAR STAR 24 PLACE ROSETTE AS BACK-UP TO PRIMARY HEALY SYSTEM
 - REFURBISHED BOTTLES AND CAROUSEL

XBT

- LAUNCHER AND CABLE RELOCATED TO SAFER STORAGE LOCATION IN AFT STAGING BAY
- TESTED OK ON DECK AND VERIFIED DURING SHAKEDOWN
- UPDATED INVENTORY OF ALL PROBE TYPES, QUANTITIES
- NEW PROBES BROUGHT ON FOR 2017
- SVP EDITOR SOFTWARE UPDATED AND VERIFIED DURING SHAKEDOWN

MULTIBEAM

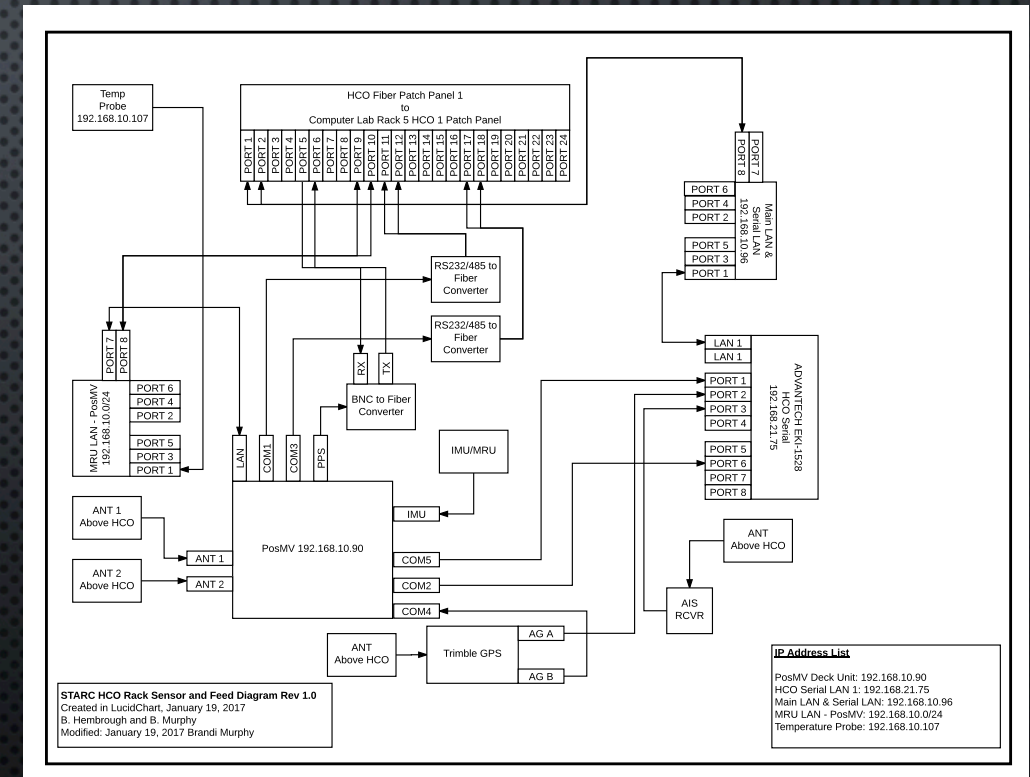
- ICE WINDOWS INSPECTION DEC 2016
- IMPEDANCE TEST RESULTS EVALUATED BY KONGSBERG
- PRE-UNDERWAY SYSTEM CHECK BY KONGSBERG JAN 2017
 - NEW PC BOARD BATTERY INSTALLED
 - FIRMWARE FLASHED FOR COMPATIBILITY
 - UNDERWAY EVALUATION ~8 DAYS JAN 2017
 - BISTS CONDUCTED AND PROVIDED TO KONGSBERG
- ACCUMENTRICS UPS SENT TO MANUFACTURER FOR REPAIR AND RECERTIFICATION
- SPARES INVENTORY UPDATED
- MULTIBEAM ADVISORY COMMITTEE AND KONGSBERG TECH ON BOARD FOR SHAKEDOWN
 - SYSTEM CONFIGURATION VERIFIED
 - POSMV CALIBRATED - GAMS
 - SEAPATH MRU CALIBRATION BY KONGSBERG
 - PARAMETER SETTINGS FOR SEAPATH AND POSMV CONFIRMED AND PRESERVED
 - PATCH TEST / CALIBRATION
 - SELF NOISE/RPM AND MACHINERY DIAGNOSTICS
 - AWAITING FULL REPORT

KSYNC

- KSYNC RE-INSTALL DURING SHAKEDOWN CRUISE
- CONFIGURATION CONFIRMED BY KONGSBERG TECHNICIAN
 - CURRENTLY SYNCING MULTIBEAM, KNUDSEN ECHOSOUNDER AND ADCP 150 & 75
 - DISCUSSIONS IN PROGRESS TO ADD BRIDGE SONARS
 - MAY ALLOW SIMULTANEOUS OPERATION OF SCIENCE AND BRIDGE SONARS WITH REDUCED IMPACT TO EM122.
 - CURRENTLY CONFIGURED FOR 2 DEPTH PROFILES (<2000M AND <5000M)
 - WILL CONTINUE TO ADD MORE PROFILES AS TIME AND ENVIRONMENTAL CONDITIONS ALLOW

DIAGRAMMING AND DOCUMENTATION

- COMPLETE WIRE TRACE AND DIAGRAM OF EVERY SCIENCE SYSTEM AND SPACE - ONGOING
- CLEAN UP AND DETAILED LABELING CONVENTION OF ALL DOCUMENTED WIRES
 - REMOVAL OF OLD CABLING
- EVERY FIBER AND FIBER PANEL SHOT WITH LASER
- IP ADDRESSES, PORT #,
- LUCIDCHART WEB-WARE
 - TRACKS CHANGES BY DATE, USER, AND REVISION HISTORY
 - SHAREABLE LINK, REMOTE EDITING
- POSTED IN SCIENCE SPACES ON RACK AND PDF AVAILABLE ON SERVER



MAPSERVER

PAST

- DEVELOPED BY STEVE ROBERTS WHO FREQUENTLY SAILED ON SCIENCE MISSIONS TO SUPPORT IN REAL TIME
 - GIS SPECIALIST IS A UNIQUE DISCIPLINE
 - PROCESSED DATASETS TO DISPLAY HISTORICAL DATA
- CUSTOMIZED FEATURES BASED ON REQUESTS FROM SCIENCE PARTIES
 - REQUIRES IN DEPTH KNOWLEDGE OF MULTI-AGENCY MODELS AND MANUAL UPDATING OF DATA TO MAINTAIN
- USEFUL SITUATIONAL AWARENESS TOOL
 - SCIENCE USERS HAVE BECOME ACCUSTOMED TO MAPSERVER AND RELY ON IT

PRESENT

- UNDOCUMENTED, CUSTOM WRITTEN, WEB OF SCRIPTS SPREAD ACROSS MULTIPLE COMPUTERS THAT ONLY ORIGINAL DEVELOPER COMPLETE UNDERSTANDING OF.
- SIGNIFICANT ANNUAL EFFORTS TO KEEP MAPSERVER IN A FUNCTIONAL STATE HAVE BEEN ONGOING. AS PERSONNEL HAVE CHANGED INSTITUTIONAL KNOWLEDGE OF CONFIGURATIONS THAT WORKED ARE NO LONGER AVAILABLE.
- RESIDES ON OLD DELL HARDWARE CIRCA 2005
 - ALL ATTEMPTS TO MIGRATE TO NEW COMPUTERS RESULTED IN BROKEN SCRIPTS AND REDUCED FUNCTIONALITY.
 - MARCH 2017 – POWER EVENT DAMAGED MAP3 HARDWARE
 - AS HEALY SENSORS AND DATA ACQUISITION SYSTEMS HAVE BEEN IMPROVED/CHANGED MAPSERVER HAS LOST FEATURES
 - INCOMPATIBLE WITH NEWER OPERATING SYSTEMS AND DATA FORMATS

MAPSERVER – WHAT NEXT ?

COMMERCIAL HYDROGRAPHIC TOOLS

- REGULAR UPDATES AND SUPPORT
- HIGHLY DOCUMENTED
- ONLINE AND IN-PERSON TRAINING FOR SAILING TECHNICIANS

MAPSERVER 2 ON R/V SIKULIAQ

- CUSTOMIZED FOR SCIENCE FLEET
- USE OF AN ORCHESTRATION UTILITY COULD PROVIDE STANDARDIZED INSTALLATIONS
- STARC INTERESTED IN COLLABORATION WITH UAF

NEW DEVELOPMENT EFFORT

- ESRI/ARCGIS
- NASA WORLD WIND
- GEOSERVER
- QGIS
- MINNESOTA MAPSERVER

ICEFLOE.NET

- CONTENT CORRECTIONS, UPDATES, AND FORMATTING ON GOING
- UPDATED TO NEWER VERSION OF DRUPAL – UNABLE TO UPDATE TO LATEST WITHOUT BREAKING FUNCTIONALITY
 - UPDATED BACK UP OF SITE
- SURVEY OF BROKEN LINKS, CMS STATISTICS ANALYSIS AND WEBSITE TRAFFIC UNDERWAY
- CURRENTLY WORKING ON:
 - UPGRADING CMS, IMPROVING UI, MOBILE RESPONSIVENESS, OPTIMIZING PAGE LOAD TIMES
- DECISION WAS MADE TO FOCUS ON SHIP PREPARATION AND CRUISE PLANNING WITH CURRENT ICEFLOE STATUS RATHER THAN IMPLEMENT CHANGES OR RISK REDUCED FUNCTIONALITY DURING PRESEASON
- ONCE HEALY IS UNDERWAY FOR THE THE SEASON MORE EFFORT WILL BE REDIRECTED TO ICEFLOE

CRUISE PLANNING TELECON AGENDA

<i>On Ice Operations</i>	<i>Yes/No</i>
Coast Guard Policy	
Number of deployments expected?	
Purpose?	
Range in miles from ship?	
Payload size and weight?	
Gasoline for equipment needed?	
Safety Equipment	
<i>Small Boat Operations</i>	<i>Yes/No – open water or in ice?</i>
Coast Guard Policy	
Number of deployments expected?	
Purpose?	
Range in miles from ship?	
Payload size and weight?	
Gasoline for equipment needed?	
Safety Equipment	

NSF INSPECTION

- TED COLBURN FROM JMS ABOARD MAY 20-22 DURING SHAKEDOWN
- OVERALL A SUCCESSFUL INSPECTION – SYSTEMS EVALUATED
 - SCIENCE OVERBOARDING EQUIPMENT – CRANES, WINCHES, A-FRAMES
 - APP A COMPLIANCE EVALUATION AND DISCUSSION
 - INSTALLED SCIENCE SYSTEMS – CTD, XBT, MET, SSW, SONARS, ETC
 - LABORATORY SPACES, REEFERS/FREEZERS, CLIMATE CONTROLLED SPACES
 - FUME HOODS, HAZMAT POLICY, SINKS, RINSE STATIONS, SPILL RESPONSE
- PRELIMINARY REPORT RECEIVED JUNE 2017 – FULL REPORT FORTHCOMING
 - “THE USCGC HEALY OCEANOGRAPHIC SYSTEMS ARE BEING MAINTAINED IN A CONDITION WHICH MEETS OR EXCEEDS THE STANDARDS TYPICALLY EXPECTED OF A RESEARCH VESSEL OF THIS SIZE AND SERVICE”

THANK YOU