

STARC Report AICC Winter 2021



Update: University of Washington

2020 Mobilization Results

2020 Cruise Support Summary

2021 Dockside Mobilization Efforts

2021 Cruise Support Ramping Up

2022 Drydock Preparation



Small Boat training ops

Acknowledgements



National Science Foundation (NSF)

United States Coast Guard (USCG)

Arctic Icebreaker Coordinating Committee (AICC)

Multibeam Advisory Committee (MAC)

WHOI Potential Fields Pool Equipment (PFPE)

National Geospatial-Intelligence Agency (NGA)

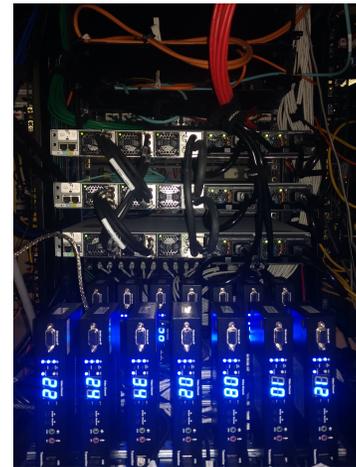
STARC University Partners (SIO, OSU, UW)

2020 Mobilization

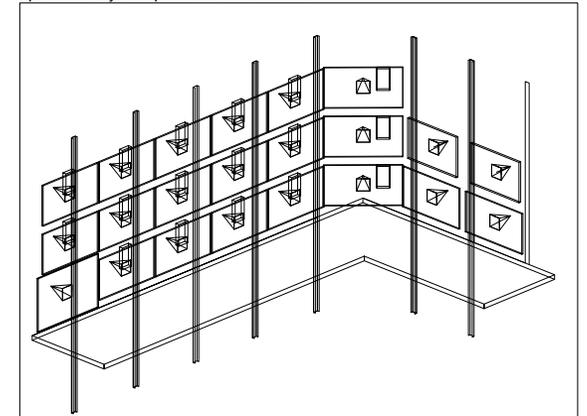


Pre-season Projects:

- CTD, SSW, and MET sensors calibrated
- Metek ultrasonic anemometers on main mast
- WETStar fluorometers on SSW walls
- Computer and VM cluster maintenance
- New ADCP and multibeam computers operational
- Cisco C9300 network switch stack, 10 Gbps capable
- Video over IP MediaCentos successfully deployed
- BGM-3 gravimeter operational (PFPE assist)
- UPS battery replacement cycle completed
- Two Autosalinometers maintained at SIO
- Assisted MOB of LDEO and Picarro pCO2 systems
- Multibeam patch test, MAC analysis and report
- OSHA Fall Protection Training for STARC techs



Proposed Healy Computer Lab Monitor Wall



2020 Cruise Support



Shakedown:

- Multibeam patch test with MAC support
- Testing and configuration

Harmful Algal Bloom (HAB):

- Canceled due to Covid-19 logistics challenges

Bering Shield:

- Collected underway data HLY20TD
- System troubleshooting

AMOS/CAATEX:

- Canceled due to engineering casualty
- Collected underway data HLY2001



Buoy test deployment August 2020

2021 Mobilization



CTD, SSW, and MET sensors

- Calibrations complete
- Purchase ECO Triplet fluorometer to replace Turner
- Purchase SBE 63 Optical Dissolved Oxygen sensor

Next-generation SSW wall implementation

- Modular grid on HDPE for flexible instrument configuration
- Siemens PLC, automated standard cycles to catch drift

Metek ultrasonic anemometer forward jackstaff

- Complement main mast Meteks

Autosalinometer maintained

- Two AutoSals will sail in 2021, one spare at SIO

Flow through pCO₂ system (LDEO) modifications

- Replace equilibrator tank with smaller design
- Install small A/C unit to regulate control module



FWD jackstaff MET install

2021 Mobilization



Computers and Data Management

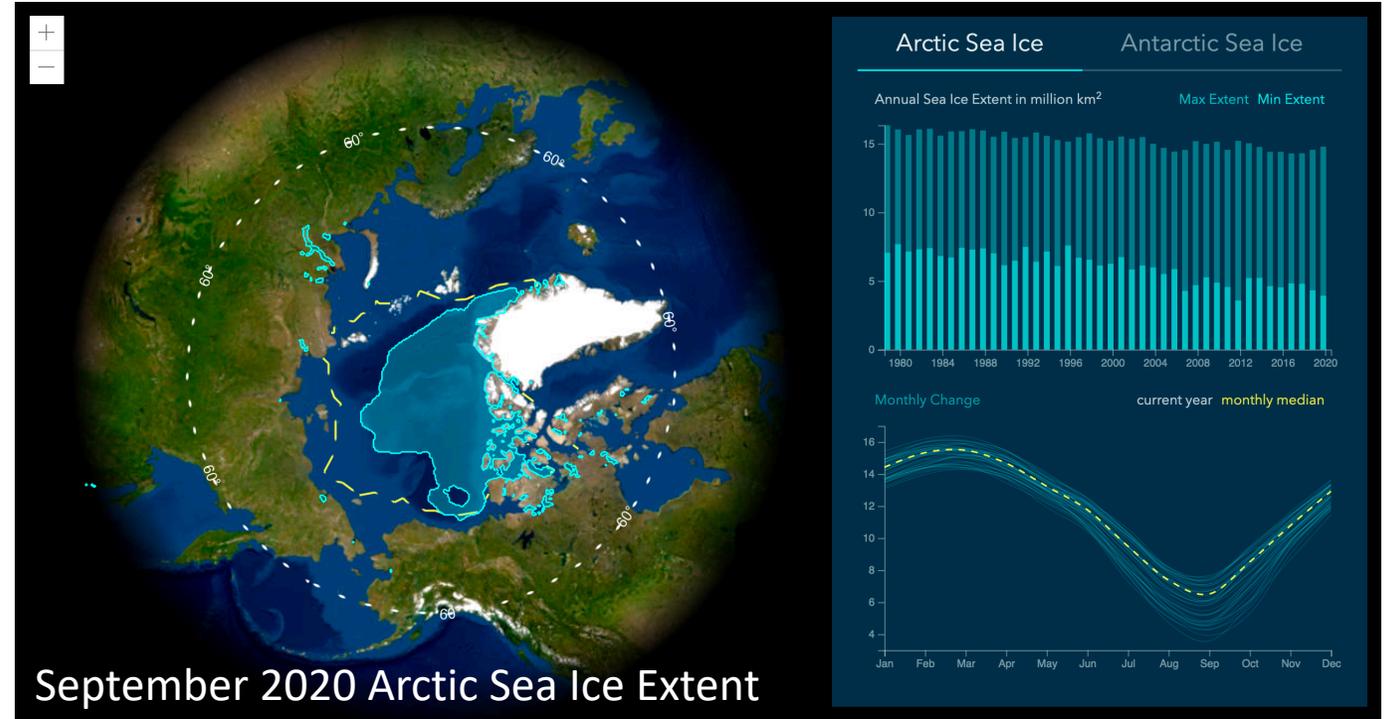
- Software and hardware maintenance
- Virtual machine cluster maintenance
- MOXA serial over IP hardware update
- OpenRVDAS deployment

Gravimeters

- BGM-3 gravimeter mobilization
- DGS gravimeter deployment for NWP

Earth Analytic SmartOcean

- Ice imagery display using NIC products
- ArcGIS based platform, offline capable
- Beta version, testing and development



2021 Cruise Support



Cruise Planning In Progress:

- Dependent on Healy's motor repair, dockside efforts, finalized schedule, and approved science missions
- Ramping up conversations with Principal Investigators regarding their instrument needs and logistics
- STARC will support all legs including transits to collect underway data and assist with additional technical requests from the various science parties
- Considering sailing an additional technician per leg for enhanced support and training onboard USCGC Healy

2022 Drydock Work Items



Transducer Well Deck Preservation

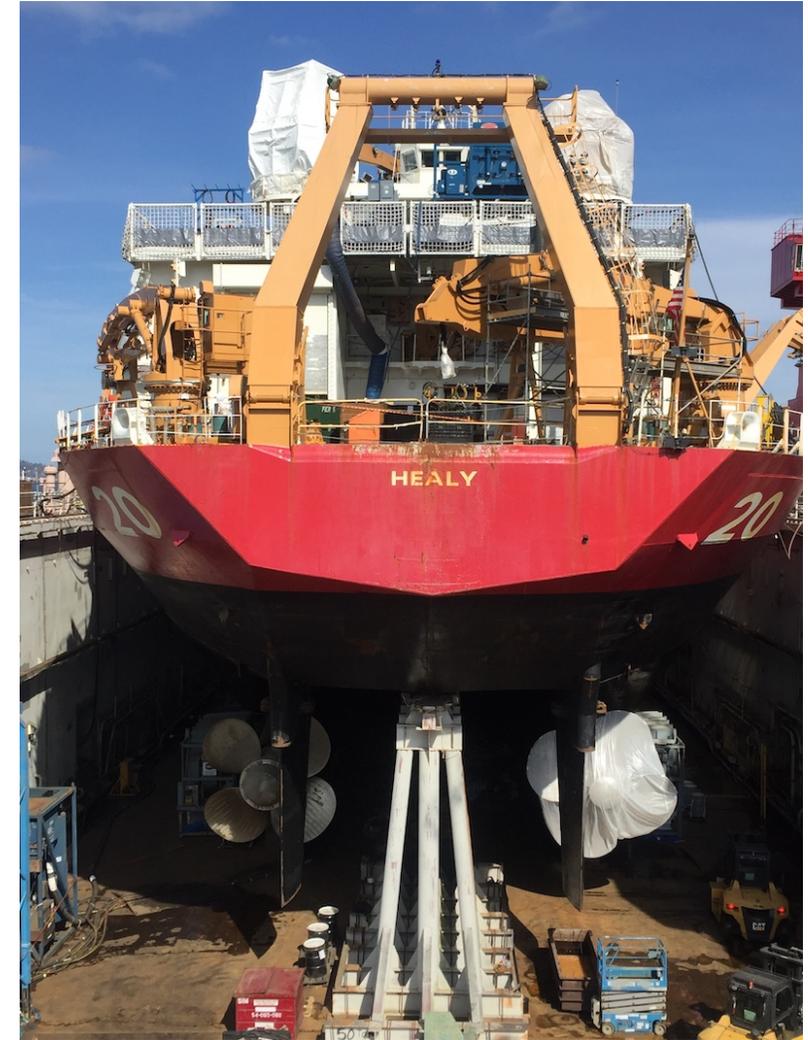
- 100% deck and 3" up bulkheads
- Transducer well exteriors and lids

Transducer Maintenance:

- All transducers will be removed
- Clean and preserve transducer well interiors
- Opportunity to swap out OS75 and OS150 ADCPs

Multibeam:

- Full EM124 update vs replacing EM122 RX array
- Timing dependent on user feedback and funding
- More details in the sonar focused presentation



Healy high and dry

Questions and Discussion



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