

# STARC Update AICC Winter 2024



**2023 Cruise Support**

**Dockside Maintenance**

**Shakedown Objectives**

**2024 Cruise Support**

**SLEP Work Items**



Photo credit - E. Vivino

Ice Station

# Acknowledgements



**National Science Foundation (NSF)**

**United States Coast Guard (USCG)**

**STARC Partner Institutions and Techs (SIO, OSU, UW)**

**Arctic Icebreaker Coordinating Committee (AICC)**

**Multibeam Advisory Committee (MAC)**

**WHOI Potential Fields Pool Equipment (PFPE)**

**National Oceanic and Atmospheric Administration (NOAA)**





# 2023 Cruise Support



## AMOS: 3 technicians

- Acoustic moorings
- Bathymetric survey
- XBT and CTD profiles

## RDC and NABOS: 4 technicians

- Moorings, CTD and underway water sampling
- Healy provides a US based platform for such work
- Coordinate installations of temporary equipment
- Provide underway data to users

## European Transits: 2-3 technicians

- Collect underway data within EEZ restrictions
- Groom acquisition systems and data management
- Integrate new team members
- Exhibit scientific capabilities to visitors and guests



Photo Credit N. Benz

Mooring Deployment

# Dockside Maintenance



## Computing Environment Overhaul

- Virtual Desktop Infrastructure (VDI) installation
- Ocean Data Tools grooming and configuration

## Underway Sensor Calibration and Recapitalization

- CTD and Science Seawater sensors
- Meteorological Temp, humidity, barometer, PAR, radiometers
- PCO2 flow through, Picarro atmospheric – NOAA

## Kongsberg Seapath 380 + MGC Installation

### Gravimeter

- BGM-3 gravimeter demobilization and mobilization

### Science Seawater System

- Pumps and valves require maintenance
- Sink outlets and piping need to be inspected/repaired

### Trawl Winch Gearbox replacement

- From 2022 brake mechanism failure



CTD Staged for Deployment



# Shakedown Objectives



## Update Data Acquisition Environment

- Check sensor feeds
- Ensure data writes correctly with Ocean Data Tools
- Verify data sync to Polar Science Network storage

## EM122 Multibeam Patch Test

- Request remote MAC support
- Usual site due to bathymetric features and historical data
- Determine Seapath330/380 and PosMV offsets

## EK80 Calibration

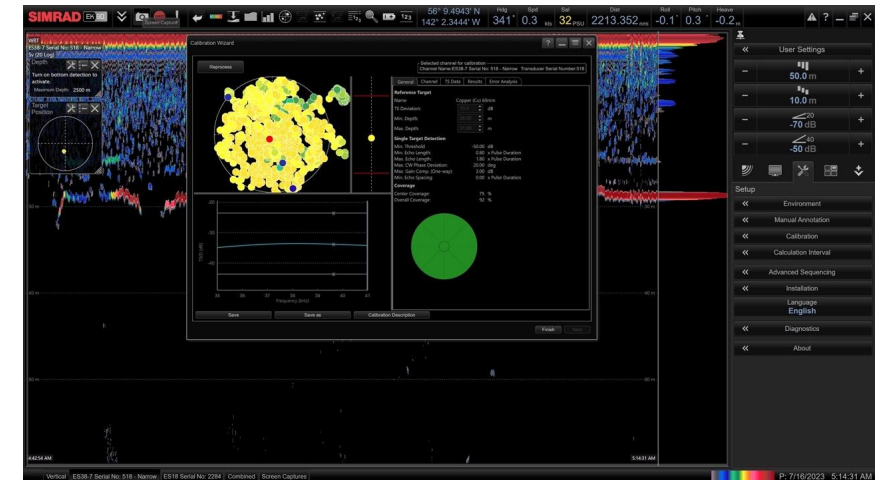
- Requires calm seas, drifting or at anchor, no thrusters
- Approximately 6 hours from start to finish including rigging

## Science Winch Verification

- Test Trawl Winch gearbox and brake functionality
- Oceanographic winch operation and CTD training
- Cast deep enough to gauge how wires lay



Multibeam Patch Test Track



2023 EK80 Calibration

# 2024 Cruise Support



## Shakedown: 6 technicians

- Acquisition system verifications, sonar calibrations

## Pickart Hydrographic: 4 technicians

- XBT and CTD profiles, moorings?

## Early Career Scientist Cruise: 3-4 technicians

- Underway data collection, XBT and CTD profiles
- Install temporary equipment for scientists

## Transits: 2-3 technicians

- Collect underway data within EEZ restrictions
- Groom acquisition systems and data management
- Integrate new team members

## GO-SHIP: 4 Technicians

- Underway data collection, XBT and CTD profiles
- Install temporary equipment for scientists
- Support science party and deck department

## MATE Internship opportunities?



STARC Team on NABOS



# SLEP Work Items



## EM304 30 kHz Multibeam

- Scheduled for FY26 Drydock Availability

## SB29 Subbottom Profiler

- Scheduled for FY26 Drydock Availability

## EM712 Shallow Water Multibeam –TBD

- Still being assessed by CG Engineering for feasibility

## Bow Tower

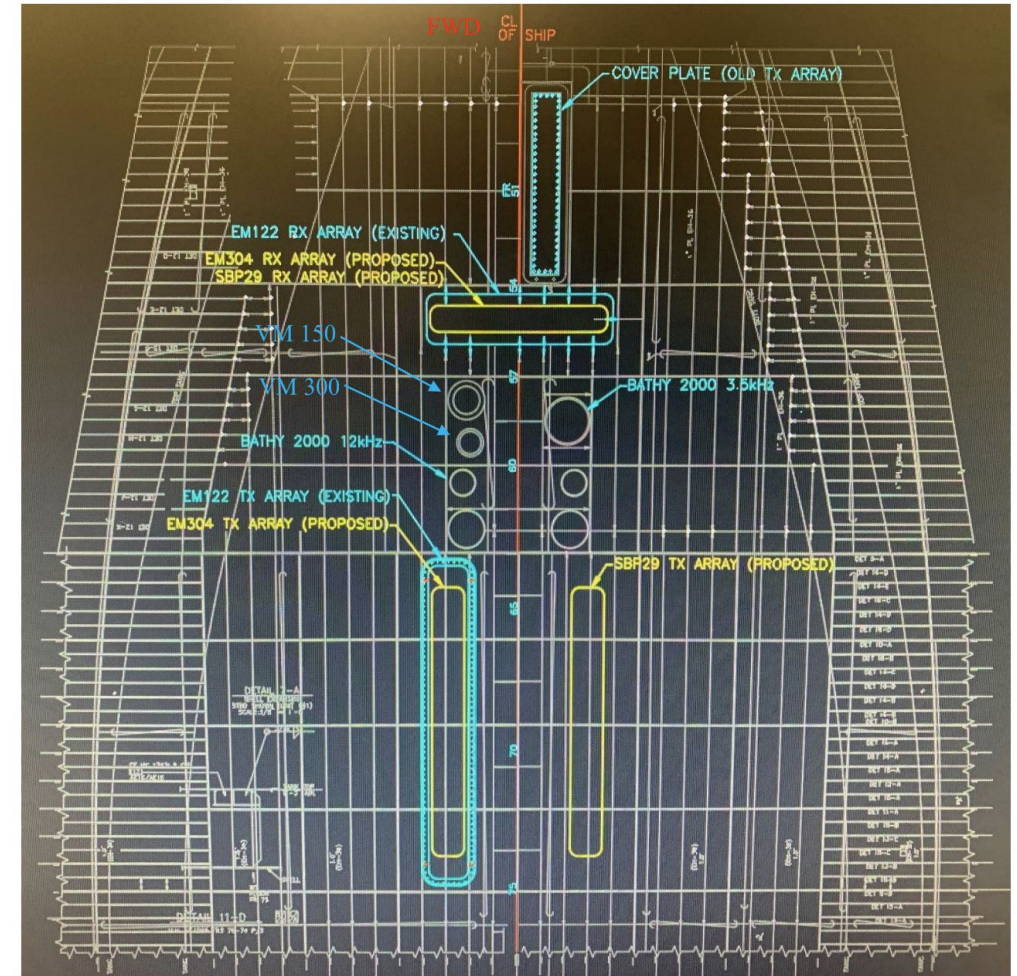
- Examples from ARF vessel provided to CG Engineering
- Scope and requirements discussed
- Initial design process underway
- Additional feedback from AICC would be appreciated

## Ice Radar

- Rutter system selected for PSCs, Healy likely to follow

## Winch Data Display

- Line Control Interface units obsolete, requires update
- Scoreboards also up for recapitalization



CGC HEALY-SLEP WI #20

Figure 10: Transducer Arrangement



# Questions and Discussion



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USCGC Healy Crew + Attaches, STARC, NABOS, and RDC Personnel