

STARC Report to AICC

Seattle, WA 19-20Nov2015

- Daniel Schuller (SIO)
- Woody Sutherland (SIO)
- Susan Becker (SIO)
- Andrew Woogen (OSU)
- Croy Carlin (OSU)

NSF STARC Grant

- Ship-based Technical support in the ARCTic
- Collaboration between SIO and OSU
- Entering 3rd year of 5 year grant
- 2014-2018

Fair Winds and Following Seas



Scott Hiller
STARC/SIO 2011-2014

- Daryl Swensen (STARC/OSU)
- David O’Gorman (STARC/OSU)

STARC 2015

- Woody Sutherland- SIO /STS manager
- Dan Schuller- SIO
 - With STS since 2003
 - Polar experience including Healy cruises, Alert field camp, Antarctica cruises and bases
- Andrew Woogen- OSU
 - Marine technician, Project Manager and Engineer
 - Texas A&M, TDI-Brooks, BIOS, WHOI, iRobot

Annual Maintenance

- Meteorological Instruments/sensors
- CTD and sensors
- Rosette carousel and bottles
- Lab clean water DI systems
- Underway pCO₂ system
- Gravimeter

New in 2015

- 2 science vans relocated to “front porch” (ongoing project)
- Upgraded berthing
 - Flat panel TVs connected to ship’s entertainment system
 - Curtains on pull-down bunk (coffins)
- POSMV motion sensor antenna moved to vibration-free location
- Sippican ethernet XBT/XCTD deck box purchased/installed/used
- Met system software upgraded
- Knudsen echo sounder software upgraded

Shakedown 26-29 May 2015

- 1 OSU tech + MATE intern
- 3 SIO techs
- Groomed science systems
- CTD cast to 500 m
- EM122 calibration

Mobilization Seattle 15-19 June 2015

- Load HLY1502 including vans over 4 days
- Holds stuffed full
- Lots of organization/reorganization
- Load HLY1501 on final day

Transit to AK 24-29 June 2015

- 1 STARC tech (SIO) on board to ready ship for RDC
- Installed last minute sensors onto CTD and Met system

HLY1501

3-26July2015

- USCG Research and Development Center
 - Communications: HF, UHF, SATCOM, MUOS and Iridium
 - Navigation: AIS and eMSI
 - Search and Rescue
 - Collaboration with NOAA (sea ice buoy deployment), SPAWAR, UA

Transit 1-4Aug2015

- Seward to Dutch Harbor
- 2 STARC techs aboard (SIO)
- Prepare ship for Geotraces

HLY1502

9Aug-11Oct (!) 2015

- 3 STARC techs (2 OSU + 1 SIO)
- Geotraces and CLIVAR/GO-SHIP
- North Pole! 5Sep2015
 - Full Geotraces station
 - Polarstern visit
- 3x CTD/rosette packages. Streamlined down to 2
- XBTs/XCTDs in open water and ice
- In-situ pumping
- Aerosol and precipitation sampling
- Ice stations (60% accomplished due to thin ice)
- Outreach -> many blogs, “float your boat”; oceanography class to Healy crew for credit

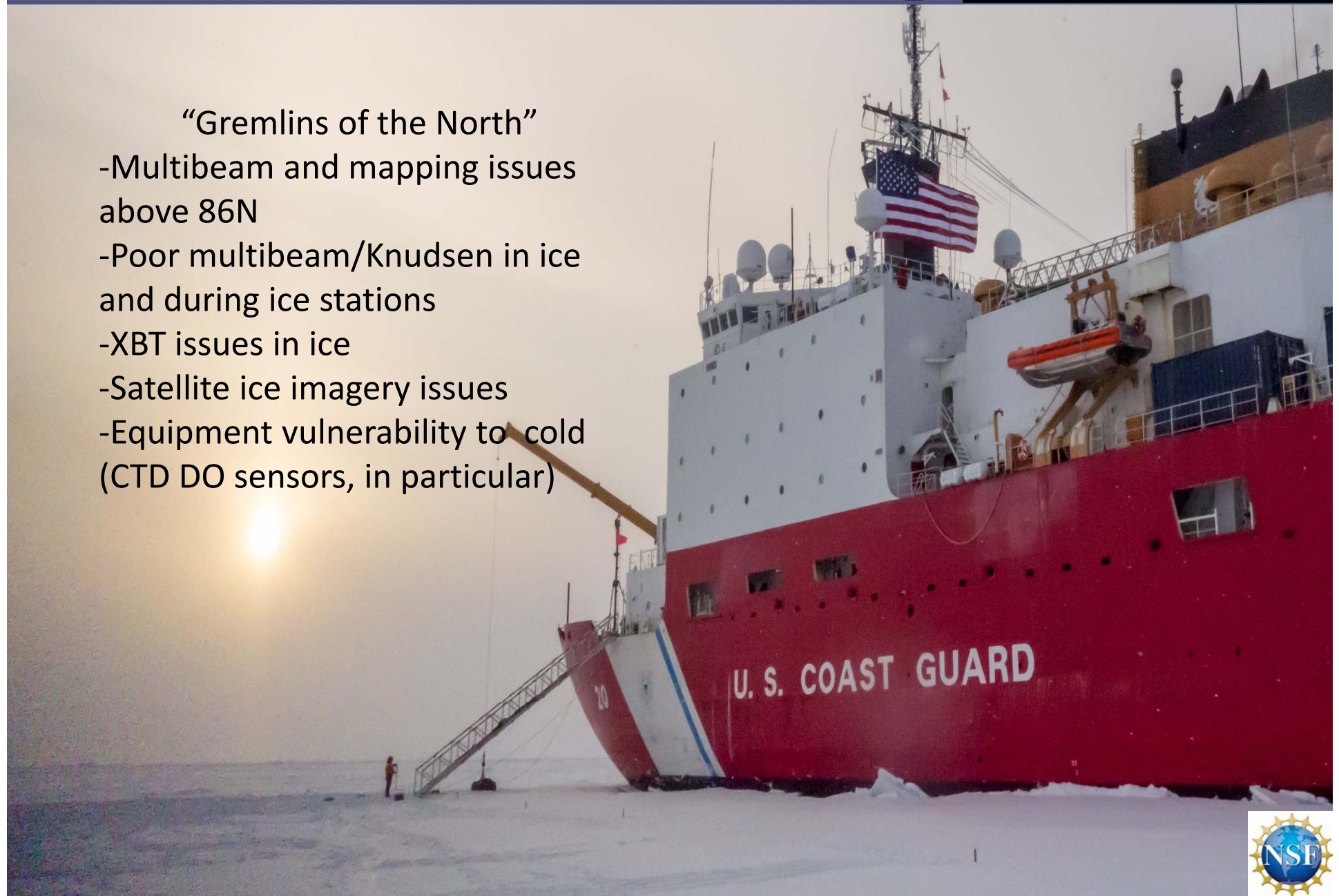
HLY1502

9Aug-11Oct (!) 2015

- Full berthing 51 scientists
- Full labs including climate control chambers
- Full hold ~70 pallet boxes
- Full deck 6 lab vans + trace metals winch + storage vans
- Full of gas 150+ gas cylinders

“Gremlins of the North”

- Multibeam and mapping issues above 86N
- Poor multibeam/Knudsen in ice and during ice stations
- XBT issues in ice
- Satellite ice imagery issues
- Equipment vulnerability to cold (CTD DO sensors, in particular)



Kadko Comments

- Load
- Gasoline
- Over-the-side
- Food service
- Medical
- Ice operations
- Communications



Transit

16-21 Oct 2015

- Dutch Harbor to Juneau
- 1 STARC tech (OSU)
- Upgrade Knudsen software

Transit

26-29 Oct 2015

- Juneau to Seattle
- 1 STARC tech (OSU)
- Gravimeter issues
- Write data
- Prep science systems for extended down time

Demobilization 2-5 Nov 2015

- Seattle
- 1 STARC tech (SIO)
- Vans off Monday
- Cargo out of hold onto dock where it was organized and palletized

Other STARC support

- Oden
- 29 July-2 September 2015
- Petermann Glacier, Greenland
- Pre-cruise planning
- OSU- Gravity, piston, multi coring
- Bear watch
- 2018 ??

Projects for 2016

- Healy in dry dock Jan2016 - ???. Where-Monday??
 - ~monthly visits by STARC and/or ESU
- Van relocation project by 31Dec2015
- Gravimeter off and stored at ESU
- Icefloe.net migration to SIO
- High speed data acquisition/logging via serial server (position, attitude, winch)
- Mapserver- ongoing...

2016 Cruises

- No NSF-funded cruises for 2016
- BOEM
- ONR/OAS
- NOAA/OE
- USCG?

2016 Cruises

- 1. MARES Marine Arctic Ecosystem Study (BOEM)
 - Carin Ashjian WHOI
 - Dutch Harbor to Dutch Harbor
 - 3 STARC technicians
 - physical, biological, chemical oceanography, biological rate studies, ice algae, ice, plankton, larval fish, benthos, fish, marine mammals observations; Underway sampling; helicopters, gliders, drones
Work will be conducted in the open water, ice covered water, and the marginal ice zone of the Beaufort Sea

2016 Cruises Cont

- 2. CANAPE- CANadian Basin Acoustic Propagation Experiment (ONR/OAS)
 - Peter Worcester SIO
 - Seward to Dutch Harbor
 - 2 STARC technicians
 - Large mooring deployments by WHOI buoy group

2016 Cruises Cont.

- 3. Chukchi Borderlands (NOAA/OE)
 - Russel Hopcroft UAF
 - Dutch Harbor to Dutch Harbor
 - 2-3 STARC technicians
 - ROV, CTD, box core, trawls, multi net
- 4. RDC ???

Mid-Life Refit

- Habitability
- Hull instruments
 - Knudsen echo sounder. Good
 - ADCP. Good
 - Multibeam
- Noise study
 - Pumps hard-mounted near transducers. Isolation mounts?
 - No ice under hull
- Shallow Arctic- broad shelf
 - Current EM122 is a deep water system
 - Quality NOAA can use for bathymetric charts
 - Shallow water multi-beam system (20-300m)
 - Kongsberg EM710 or 2040
 - Hull? Gondola on hydraulic pole?

THANK YOU



Picture by Cory Mendenhall

