

AR30-06: Dr. Robert Pickart “ONSAP West” on R/V *Armstrong*

Precruise Meeting: Tuesday 29 May 2018, 1000 EDT

3rd Floor Smith Conference Room

Call in: 508.289.3192 ext. 203777

Synopsis: <http://www.whoi.edu/cruiseplanning/synopsis.do?id=5222>



General Information

Mission Objectives

This research is part of the Overturning in the Subpolar North Atlantic Program (OSNAP), an effort to determine the strength of the meridional overturning circulation and associated heat and freshwater fluxes in the subpolar North Atlantic. It is a collaborative program with scientists from several nations, including the U.K., the Netherlands, Germany, France, Canada and China.

3rd time doing this work, so ship should be familiar – turning around same arrays as last time

The specific objectives of this cruise are as follows:

1. To service 18 current meter and sound source moorings in the southeast Labrador Sea and southwest Irminger Sea.
2. To conduct a hydrographic/velocity survey in the vicinity of Cape Farewell and in Denmark Strait.

Science Activities

1. We will recover 18 moorings and deploy 17 moorings. There are three types of moorings: tall oceanographic moorings (9); shelf-tripods (8) – simpler than tall moorings; sound source mooring (1) for amy bower. Cant fit all moorings onboard at the same time. Will pull, cycle, redeploy. Anticipating poor weather and need for flexibility. Micro cat dips, for calibration purposes
2. We will occupy CTD/LADCP/Microstructure stations at all of the mooring sites, and also carry out a CTD/LADCP/Microstructure survey. – not as many at 345 stations – not going to go as shallow this year, want to focus on continental slope, so anticipate fewer stations
3. We will collect underway data throughout the cruise (vessel-mounted ADCP, Knudsen, met sensors). ADCP very import since they are doing velocity sensors

Will start with microcat dips and calibrations, then CTD then mooring work on the eastern edge

Chief Scientist and PIs

Robert Pickart: Chief Scientist, Principal Investigator

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Ship's Personnel (*subject to change*)

Captain: Kent Sheasley Chief Mate: Logan Johnson

Chief Eng.: Gary McGrath

Bosun: Pete Liarkos

SSSG: Joe McCabe & TBD from Tech Pool

Note: WHOI SSSG techs do not stand watches, but are available 24/7 to provide support for integrating science party equipment with ship systems, and aiding science party in the use of ship-based instrumentation to meet project objectives. If specialized/dedicated techs are required to run operations or equipment, they must be added to your science party. SSSG techs are not part of the science party.

Science Party

24 Max – [15 now, likely not](#)

Mooring Tech Lead - [John Kemp, other techs: Andy, Brian, BIOS assistant](#)

Participant list & [berthing diagram](#) send to Sarah Fuller (sfuller@whoi.edu)

Personnel Forms due to Kim Ray (kray@whoi.edu) 1 month before departure -

Any crew member who has sailed within past 6 months should be up to date on forms

Highlight any food allergies/restrictions as soon as possible

Voyage Info:

Ship transit speed: Max 11 kts.

Reykjavik, IS – Reykjavik, IS

24 August 2018 – Start mobilization

25 August, Noon - Move aboard

27 August, Morning – Departure (potential for fueling on way out of harbor) – [Arriving on the 26 – wait for chief scientist prior to departure](#)

03 October, Morning – Arrival

04 October – Move off ship by Noon and finish demobilization

Operating area

Southern Greenland & Denmark Strait

Lat/Lon: 59° 20.0' N / 43° 50.0' W

Depth Range: 100 / 3500

MSR Clearance – Canada, Greenland, Iceland

Station Locations

Estimated 345 locations, listed in document “stations_tentative_ar30.txt” in synopsis – [need to be modified for continental slope – they will be done on the fly – will not have new stations list ahead of cruise, but will be in the same general area and will be upwards of 200 total, but likely less than 345 listed in synopsis.](#)

[Possibly not doing the Canadian stations, would rather do the Denmark strait](#)

Graphic included – [from 2016 – this is old, but this year’s stations will be in the same general area](#)

Port Office has requested list of stations that are in designated Polar Waters – [never mind, Pam will address this if needed](#)

[DMI – will be sending ice information about icebergs and any pack ice – will be sent to captain and Bob every day; cut through Prince Christian Sound](#)

[Want to bring items home on the ship. Jamie will give me the manifest of what is staying to get approval from the ship.](#)

[Testing release on the CTD](#)

Scientific Support

**Please highlight mission critical sensors & indicate duration of use for different systems – continuous, planned ‘short’ term, or opportunistic*

Shipboard Equipment

ADCP 38, 150, & 300 kHz – [mission critical \(except 300\) – Dan Torres is the tech on](#)

Bathymetry Systems: 3.5kHz, 12 kHz – [if things go well, then hopefully wont need the multibeam; will drag for moorings - probably don’t need the 3.5, definitely use the 12](#)

EM122 (12kHz) Multibeam w/ XBTs for SSV (any other XBT needs?) – [opportunistic; no XBTs](#)

EM710 MkII (40 to 100 kHz) Multibeam Echosounder – shallow water multibeam & water column data - opportunistic

12 kHz pinger for wire use – not needed but it will be there

EK80 Sonar – expected duration of use? Possibly be able to use it for finding moorings if need to drag; don't need to save the data – just for hunting

Deionized water system

Science underway seawater system

Plotters – not likely needed; do need printers

K-synch system – supposed to coordinate acoustics, there if wanted

A-frame

Crane

DP

Acoustic surveys when deploying moorings

SSSG Techs are requested to be capable of running the acoustics for this cruise

CTD/Water Sampling

911+ Rosette 24-position, 10-liter bottle Rosette with dual T/C sensors **Requested a complete backup CTD* - complete back up, not just central pylon. Marshall is working on it – Bob will talk to Marshall directly*

Wet Labs C*Star transmissometer (660nm wavelength)

SBE43 oxygen sensor

Wet Labs FLNTURTD Combination Fluorometer and Turbidity Sensor – *standard sensor we keep on the Rosette*

Wet Labs ECO-AFL fluorometer – *as back up, or always mounted? – can we get these onboard as spares? – Bob will talk to Marshall*

Seapoint STM turbidity sensor – *as back up, or always mounted? – can we get these onboard for spares? – Bob will talk to Marshall*

Biospherical underwater PAR (1000m depth limit) with reference Surface PAR – possibly scratch the par so we can go deeper to 3500 – will be onboard, but will get in the way with LADCP if needs to be mounted

LADCP – *Has a request gone in to Dan Torres? – all aboard and should be all set*

**Science provided – 4 chipod sensors - Will you bring your own mounts & cabling? – scripps person – independent, batteries, put on the top of the CTD – Bob will send a photo, should not be a drag issue*

Hydrographic Analysis Equipment – request for SSSG to provide (*need to check with Marshall Schwartz & Dave Wellwood for availability*)

Salinometer – Bob will check with Marshall and dave for a back up

Salt Bottles (2 cases of 125 ml provided) – Bob will check with marshall to find out if he needs more – how many Any interest in oxygen titration? – Nope!

Want to set up where temperature is the most stable – Dave Wellwood knows best

CTD hangar – no tigger, but there are tracks to bring it into the hanger; will have 2 watch standers available to help move the CTD into the hangar, the tech and ships deck crew should be able to help move it into the hangar, have winch operator help out once onboard – feel free while at sea to kindly ask for assistance when needed

MET Sensors – Robbie when have the calibrations been done?

Air temperature

Barometric Pressure

Precipitation – no cal

Relative Humidity

Short & Long wave radiation – just calibrated

Wind speed & direction – no cal; pair of them up there

Any ancillary MET sensors to be added to the mast? - Nope

Shipboard Communication

Basic Internet access via HiSeasNet - [no data travel](#)

Duration & frequency of skype/video conferencing?

Any outreach plans? - [none](#)

*Please review "Internet-at-Sea" document provided with Precruise Agenda

Navigation

GPS – any special needs? – [Nope; John will have the offsets for the moorings](#)

Sample Storage

None requested

Winches, Wire, & Deck Equipment

CTD Winch with .322 Electro-mechanical wire

Trawl winch with 9/16th trawl wire

TSE has been requested from pool with necessary blocks – *should already be in Iceland*

Vans & Topside Equipment

Will there be any vans, or is deck equipment only moorings?

[Rigging Van, storage vane, 2 ball vans](#)

We will need a deck layout that includes locations & weights of mooring equipment

Ship Power Requirements:

Any special needs other than TSE? – [480 for TSE, 1 rigging van needs power](#)

Hazardous Material

None indicated

Manifest for Li batteries needed – link to form here: <http://www.whoi.edu/sbl/liteSite.do?litesiteid=7092>

[Instruments recovered, they will stay in the instrument](#)

Other Special Requirements

Nighttime ops anticipated – *mostly for CTD work?*

Will you need cranes/forklifts in Reykjavik? –

[Dan needs to do compass spins ahead of time – likely on the dock or in the warehouse](#)

[Need a forktruck to offload the containers](#)

[Ships crane is sufficient](#)

Mooring Operations

Mooring Diagrams

Completed and attached to synopsis for Pickart Moorings – "OSNAP_Pickart_As_deployed_2016.pdf"

Please reupload "OSNAP_Straneo_As_deployed_2016.pdf" – [send to me](#)

[Need the diagrams for the tripods – Bob will send them to me](#)

Personnel

Plan on providing the required personnel to deploy/recover your moorings and to operate the TSE winch.

Deployment & Recovery Procedures

Recovery & deployment procedures will be discussed during mobilization, directly with the Bosun and Chief Mate.

These plans will then be approved by the Captain. These procedures will also be readdressed, gone over, and agreed upon prior to each operation while underway.

Safety

Deck Safety

Closed toe/heel shoes must be worn at all times on deck, and in labs/common areas.
Steel toe shoes required for movement of heavy equipment.
Open toe/heel only allowed in personal cabins.

Launch & Recovery: Safety Shoes, hard hats and vests must be worn; safety plan required

On the dock or at sea: hard hats for overhead lifts, fall protection for working on top of vans or for attaching gear on railings or towers.

We will have some hard hats, but bring one if you have one.

Lab Safety – PPE

Science party is responsible for laboratory PPE including lab goggles, coat, gloves, storage containment and cleanup kits for working with all hazardous materials brought onboard the vessel.

Shipping & Loading Logistics / Fiscal Responsibility

Please share manifests, shipment ETA, and tracking information with Sarah at sfuller@whoi.edu.

Mobilizing/Demobilizing in Reykjavik, Iceland

You are welcome to hire your own agent to handle your logistics in Iceland, or you may choose to use the ship's agent.

- If you need to contact the ship's agent at any time, please do so through Sarah Fuller (sfuller@whoi.edu) and Kerry Heywood (kheywood@whoi.edu).
- If you use the ship's agent, you may set up your own account with the agent to keep science bills separate and directly pay the agent. These discussions should happen directly with the agent.

The ship's agent in Iceland is:

Primary Contact: Johann Bogason
Direct line: 11 354 856 0701
Email: Jóhann Bogason - JOB Johann@gara.is

For shipments arriving in Iceland to the ship's agent, use the following address:

NOTE: TVG-Zimsen and WHOI contacts must be notified of all equipment and supply shipments. WHOI contacts must be copied on all correspondence with the agent.

Master R/V Neil Armstrong
Attn: Scientist's Name
c/o TVG-Zimsen ehf
Korngardar 2
104 Reykjavik
Iceland

Phone: 011 354 560 0700
Fax: 011 354 5600 780

24 Hour Mobile Service: 011 354 856 0701

**Email: gara@gara.is - Note: Please use this address for all email correspondence with the agent(s).

[Project number for customs paperwork etc – Bob will send it to me](#)

Financial responsibility

If you chose to use the ship's agent without setting up your own account and proforma, then WHOI requires you to set up a PO for any anticipated mobilization/demobilization costs. Regardless of agent affiliation, if any science gear is left aboard the ship to return to the USA, a PO will be required to cover US Customs costs incurred during the ship's clearance into the USA.

*Starting 2018, WHOI will cover certain fees when they occur at/on the ship, including immigration, cranes, forklifts, and stevedores for loading/offloading containers/heavy equipment. The science party will be responsible for all other costs associated with their science gear, including but not limited to: customs clearance of science equipment, visas, equipment storage, shipping and handling, purchase of science supplies (gases, chemicals, etc), personnel transportation costs to/from the ship, hazardous waste disposal, unexpected travel or medical needs, etc.

WHOI charges an MTDC rate of 40.96% for non-WHOI PIs. For WHOI PIs, research rates apply.

You may work with Sarah to estimate a budget for your anticipated science needs and supply a WHOI Project Number and/or create a Purchase Order. Otherwise, science personnel are expected to secure their own agent independent of the ship.

If any costs are unexpectedly incurred without a PO, the Chief Scientist will work with Sarah & the Marine Operations Department to resolve the outstanding invoice(s).

If you have any questions, please contact Sarah Fuller (sfuller@whoi.edu).

Post Cruise Responsibilities

Actions departing ship

All scientists are responsible for cleaning their cabins & heads.

Remove all scientific samples, chemicals, waste, gases, and cylinders, unless specific permission has been given to leave them aboard. If items are left aboard, plan on sending a representative from your group to remove these items from the ship at the designated time & port. WHOI is not responsible for items left aboard outside of your designated cruise time.

Any materials staying aboard must be *redundantly* labelled with owner's name, contact information, and cruise Id. Science personnel are expected to then meet the ship at a designated port/time to collect these items personally. WHOI, the ship, and crew are not responsible for handling/maintaining/shipping/etc. any science gear left aboard.

UNOLS cruise evaluation

To be completed by both Chief Scientist & Master [Post Cruise Report Link](#)

Reports to foreign government/State Department: required for work in EEZs; send to Kerry Strom, kstrom@whoi.edu

Reports to R2R: <https://www.unols.org/document/cruise-personnel-manifest>

Chief Scientist should fill this out and send to dropbox@rvdata.us at some point during the cruise

Data delivery [shipboard]: USB Hard drive

Data archiving policy

All data on a WHOI Cruise Data Distribution (which includes all underway data) will, by default be considered publicly available once a copy of it has been delivered to the chief scientist at the end of the cruise. Please review the [Cruise Assignment of Data Access Protection](#)

As of January 1, 2011, the default treatment for underway data from Woods Hole Oceanographic Institution (WHOI) research vessels is:

1. Cruise data files are copied by a WHOI SSSG Technician to the distribution media. One copy is delivered to the cruise Chief Scientist, the other is delivered to WHOI's Data Library and Archives. Please note that the distribution of cruise data to other scientist is the responsibility of the Chief Scientist.
2. The **default** access status for the cruise instrument datasets is that they will be immediately accessible by the public. If something other than this default protection is desired, the Chief Scientist must assign alternate protection as indicated below. For cruises funded by the National Science Foundation ,the maximum protection is two years, for non-NFS cruises, other guidelines may apply.
3. WHOI maintains a local copy of the cruise shipboard data distribution at its Data Library and Archives, which also honors access moratorium periods. If the cruise Chief Scientist wishes to modify the data protection assignments made in this pre-cruise document upon cruise completion, they should contact the
4. WHOI Data Library and Archives at dla@whoi.edu, or the SSSG Data Manager at sssgdatamgr@whoi.edu

Laura to not distribute data right away – Bob will sign form, Sarah will put the 2 in touch