RCRV Project Update for RVOC

Daryl Swensen, Transition to Operations Coordinator, 01 May 2024

RCRV
Regional Class Research Vessels

Oregon State University

Bollinger SHIPYARDS

Regional Class Research Vessel -
Project Field Office- Bollinger Shipyard- Houma, LA

John Comar
Shipyard
Representative

Robert (Bob) Jarvis
Project Management
Recently Retired*

Hannah Rivera
Program Administration
Coordinator

Russ Morton
Deputy Shipyard
Representative

Greg Marchese
Weld and Structure
Inspector*

Mike Portier
Electrical and
Electronics Inspector*

Jason Duplechin
Hull and Machinery
Inspector*

Dan Slobodzian
Lead Engineer for
Inspection & Test

Kristin Beem
Marine Science
Technical Director

*Indicates Subcontractors to OSU

Regional Class Research Vessel
Transition to Operations Phase IV

Daryl Swensen
Transition to Ops. Coordinator

Chris Romsos Datapresence
Systems Engineer

Jasmine Nahorniak
Assistant Datapresence Systems Engineer

James Caison
Design Specialist

Don Hilliard
Fleet Engineer

Yvan Alleau
Logistics Specialist

Kris Saathoff
Buyer

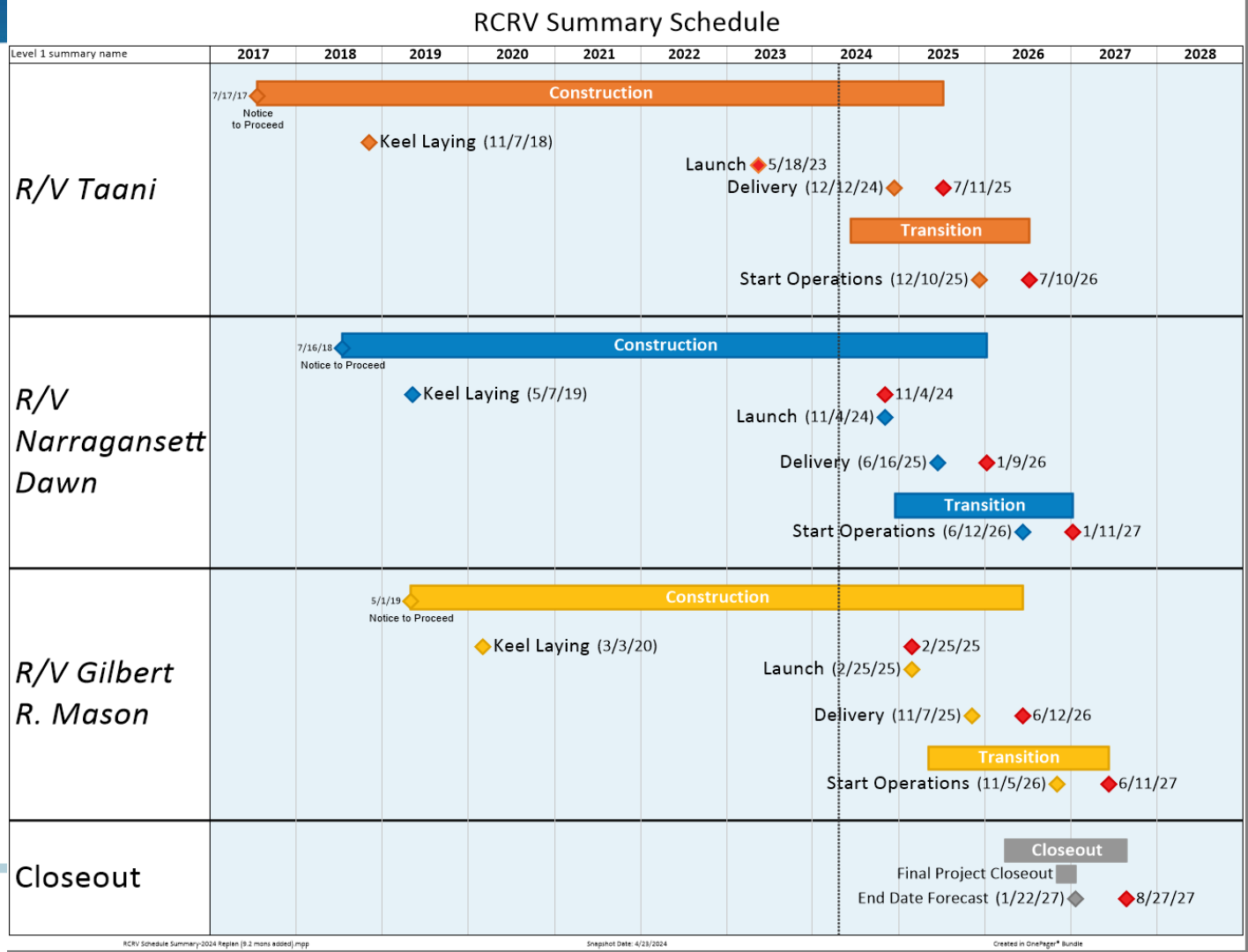
?

TBD: Position Open
Data Systems Specialist

Shipyard Baseline Schedule

Estimated Schedule Delivery

R/V Taani
07/11/2025
R/V Narragansett Dawn
01/09/2026
R/V Gilbert R. Mason
06/12/2026



RCRV
Regional Class Research Vessels

Vessel Updates

RCRV
Regional Class Research Vessels

Oregon State University

Bollinger SHIPYARDS

R/V *Taani*

- Launch June 2023
- Subcontractor Work
  - Wiring, Insulation, Painting
- Pipe Flushing
- Insulation and Joiner Work
- OHS equipment installation and alignment
- Wire Pulling
  - 157 km of cable required
  - 25% Completed
- Misc. Paint Work

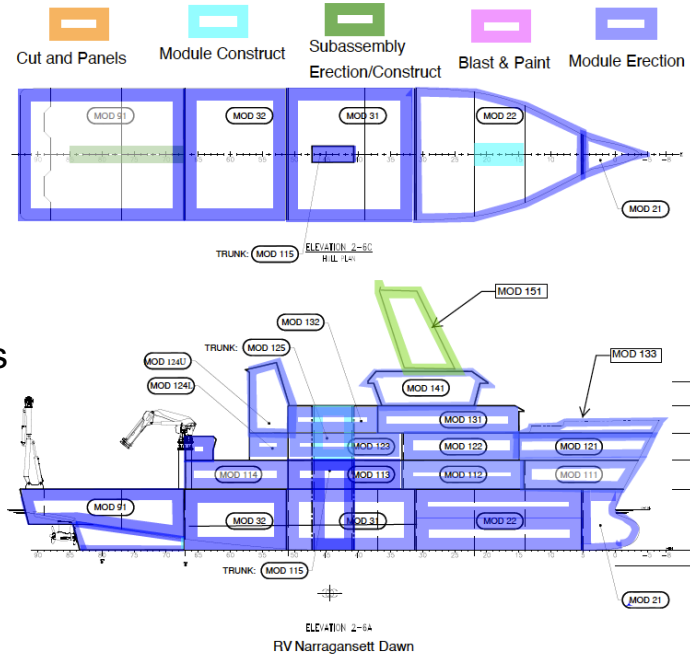
RCRV Regional Class Research Vessels

Oregon State University

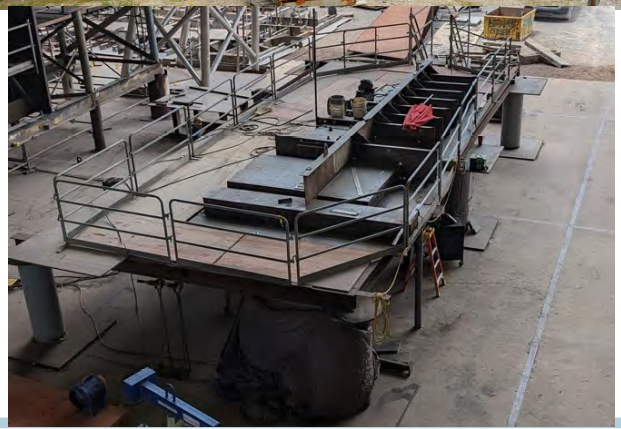
Bollinger SHIPYARDS

R/V *Narragansett Dawn*

- March 2024
  - Superstructure Erected to Hull
- Sonar Flat Assembly
- Preparation for Z-Drive Installation
  - Week of (04/29)
- Piping Work Various Modules
- Outfitting Ongoing Various Modules
- Painting Work
- Aluminum Centerboard Blast and Paint
- OHS Equipment Delivered



RV Narragansett Dawn



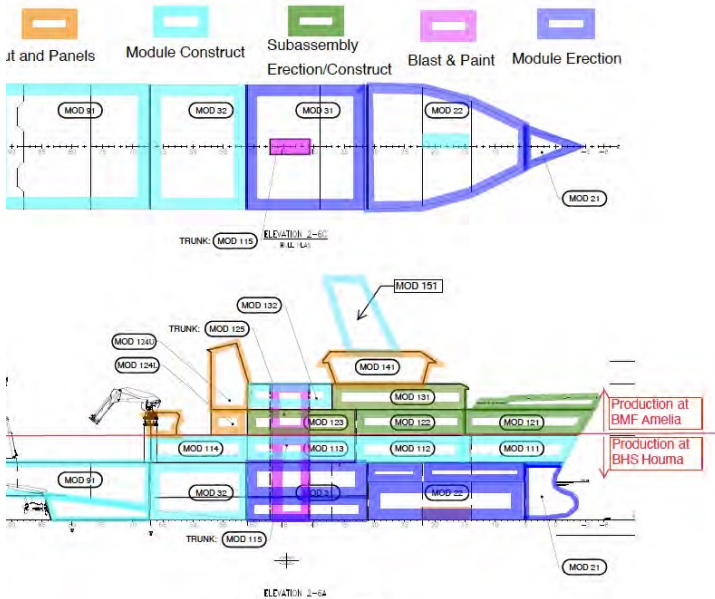
RCRV Regional Class Research Vessels

Oregon State University

Bollinger SHIPYARDS

R/V *Gilbert R. Mason*

- Welding Work and Module Assembly
- Modules In Cut and Panel
- Aluminum Centerboard Blast and Paint
- Piping Work Various Modules
- Outfitting Ongoing Various Modules
- Painting Work
- Aluminum Centerboard Blast and Paint
- OHS Equipment Delivered



RV GILBERT R. MASON

RCRV Regional Class Research Vessels

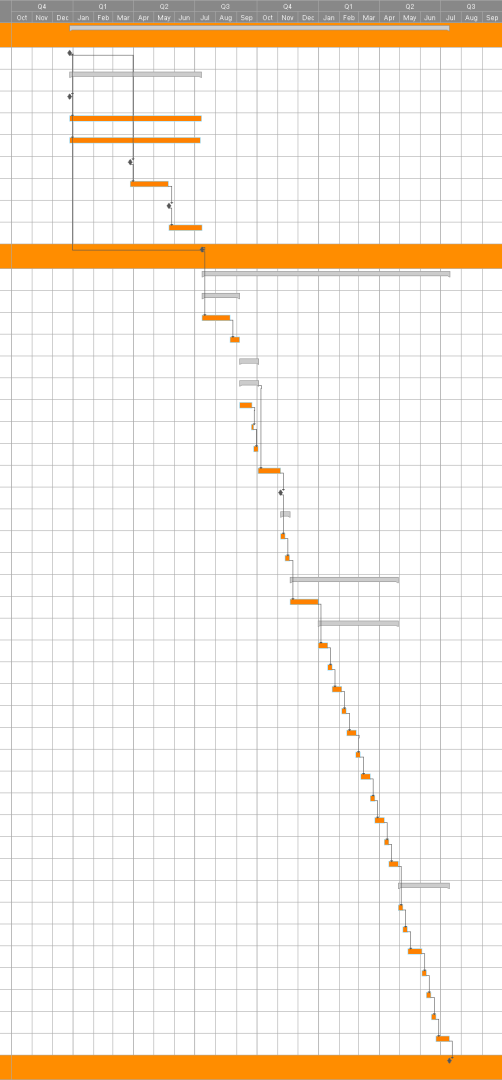
Oregon State University

Bollinger SHIPYARDS

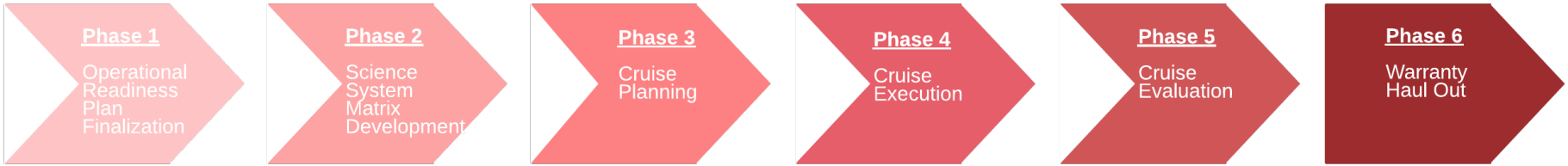
Phase IV Activities

- High Level Activities and Milestones
  - Crew Hiring, Orientation and Training
  - Post-Delivery Outfitting
  - Vessel Familiarization
  - Transit to Home Port
  - Operation and Science Trials
  - Warranty Haul-out
  - NSF Inspection
  - Start of Operations

Task Name	Start Date	End Date
R/V Taani Transition to Operations	**12/27/24**	**07/13/26**
Start of Transition to Operations	12/27/24	12/27/24
Pre-Delivery Support	12/27/24	07/10/25
Engineer, Mate and Technician at Shipyard Office	12/27/24	12/27/24
Crew Readiness	12/27/24	07/10/25
Engineer, Mate and Technician for Inspection and Familiarization	12/27/24	07/08/25
Full Crew Complement Hired	03/27/25	03/27/25
New Crew Orientation and Training	03/27/25	05/22/25
Crew to Shipyard Office	05/22/25	05/22/25
OSU Crew at Shipyard Office for Familiarization and Training	05/23/25	07/10/25
Delivery	**07/11/25**	**07/11/25**
Outfitting, Operator and Science Trials	07/11/25	07/13/26
Post Delivery Outfitting and Crew Familiarization at Shipyard	07/11/25	09/04/25
Outfitting at BHS	07/11/25	08/21/25
Crew Familiarization from Deep Water Access Dock	08/22/25	09/04/25
Transit to Newport, Oregon	09/05/25	10/02/25
Deepwater Trials #1 TA2403A	09/05/25	10/02/25
Acoustic Testing	09/05/25	09/22/25
Port Stop Puerto Rico	09/23/25	09/25/25
OHS Testing	09/26/25	10/02/25
Transit to Homeport TA2404A	10/03/25	11/04/25
Home Port Arrival	11/04/25	11/04/25
Home Port Ceremonies	11/05/25	11/18/25
Vessel Cleanup and Preparation	11/05/25	11/11/25
Official Ceremonies	11/12/25	11/18/25
Local Outfitting, Operator and Science Trials	11/19/25	04/28/26
Outfitting at Home Port	11/19/25	12/30/25
Operator and Science Trials	12/31/25	04/28/26
General Operations #1 TA2407A	12/31/25	01/13/26
Shoreside Preparation	01/14/26	01/20/26
Science #1 Physical TA2408A	01/21/26	02/03/26
Shoreside Preparation	02/04/26	02/10/26
Science #2 Biological TA2408B	02/11/26	02/24/26
Shoreside Preparation	02/25/26	03/03/26
Science #3 Chemical TA2409A	03/04/26	03/17/26
Shoreside Preparation	03/18/26	03/24/26
Science #4 Geological TA2410A	03/25/26	04/07/26
Shoreside Preparation	04/08/26	04/14/26
Science #5 Education TA2410B	04/15/26	04/28/26
Warranty Haulout, and NSF Inspection	04/29/26	07/13/26
Preparation for Shipyard	04/29/26	05/05/26
Transit to Shipyard	05/06/26	05/12/26
Warranty Haulout	05/13/26	06/02/26
Transit from Shipyard	06/03/26	06/09/26
Dockside Preparation for NSF Inspection	06/10/26	06/16/26
NSF Inspection	06/17/26	06/23/26
Final Dockside Preparation for Operations	06/24/26	07/13/26
Start of Operations	**07/13/26**	**07/13/26**



Six Steps to RCRV Science Trials



- Operations and Science Trials Matrix
- Crew and Marine Technician training and familiarizations with vessel(s)
  - 2-3 extra crew before ACCU
- Testing and baseline verification of vessel systems, science mission equipment and sensors
- At sea cruise testing for planning, operations, documentation and efficiency prior to funded science.
- Identify warranty deficiencies, regional differences and vessel enhancements.
- Warranty haul-out punch list.

Operation and Science Trials

Opps and Sci Trials Matrix Combined (RevC)

	Modified	Modified By	SWBS / WBS	Department	System	Subsystem / Sensor	Test Type	Cruise Designator	CORIOLIX or IT Needs	Test Set (A, B, C, X)	Combination Test	Required Single Test Duration (hrs.)	Required Integration Test Duration (hrs.)	Location Needs	Environmental Conditions Needed	Day or Night Needed	System Expert	Tech Rep
1	Modified at Workshop	Example	Work Breakdown Structure to identify RCRV packages- 01.02.01.04	Science or Operations	Relevant System- Flowthrough Sensors	Associated Sensor or Subsystem- WETStar Fluorometer	What factors are being tested- Performance and Data Quality	All	Are there any systems required to be in place prior to test/ verification	A = First order test completed during initial deep water trials B = Primary single item test C = Combination test, multiple items in conjunction X = Functional Test / Anytime	Combination test specifics	How long is required for a single test (hr)- e.g.1 hour	How long is required for full integration (hr) - e.g. 72 hours in transit	Location or geographic conditions needed for test - e.g. Dockside, Shallow water, underway	What testing conditions are needed - e.g. productive and blue waters	Day, Night, Both, NA- e.g. And, Or, Both	System Experts for test/verification- Contact Name, - e.g. Reimers	Is a vendor or manufacturer tech representative needed
2	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Biospherical PAR Sensor QSR	Performance, Precision, and Data Quality	Physical		B, C						Day	Kathy Lantz (NOAA)	
3	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Biospherical PAR Sensor QCR	Performance, Precision, and Data Quality	Physical		B, C						Day	Kathy Lantz (NOAA)	
4	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Vaisala PTU300 MET Station	Performance, Precision, and Data Quality	Physical		B, C							SAMOS	
5	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Vaisala WXT536 MET Station	Performance, Precision, and Data Quality	Physical		B, C							SAMOS	
6	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Ship-supplied RM Young 61302 Barometer	Performance, Precision, and Data Quality	Physical	IMACS to CORIOLIX	A, B, C							SAMOS	
7	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Primary Radiometer Mast	Performance, Precision, and Data Quality	Physical		B, C						Day	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
8	NA	NA	01.02.01.05	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Primary Radiometer Mast	Test 1-- Light Pollution	Physical		B, C, ships lighting systems coordination with the Bridge						Night	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
9	NA	NA	01.02.01.06	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Primary Radiometer Mast	Test 2-- Ventilator performance	Physical		B, C		Ideally someone would visually identify times when the sensors have condensation/frost and compare how quickly they dry off without cleaning. It will also be important to have full clear days and nights to look at the impact of ventilation on infrared loss.			fog, chilly mornings, sea spray conditions & also at least one clear sky day	Day or Night	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
10	NA	NA	01.02.01.07	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Primary Radiometer Mast	Test 3-- Shading	Physical		B, C, Will require some kind of survey of where obstacles are relative to instruments (elevation & azimuth angles of a "horizon")					need sunny conditions with different ship orientations and low and high sun angles	Day	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
11	NA	NA	01.02.01.08	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Primary Radiometer Mast	Test 4-- Tilt Correction	Physical		B, C, need SPN1 and SMP-21 radiometers & ship motion info (pitch, roll, yaw)			ideally a long timeseries to be able to do statistical comparisons in different ship motion and clear sky conditions. We want to check the influence of corrections versus averaging, etc.		sunny and/or partially cloudy conditions, and preferably some rougher seas with a variety of pitch and roll	Day	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
12	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Fan Main Mast	Performance, Precision, and Data Quality	Physical		B, C						Day	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
13	NA	NA	01.02.01.05	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Fan Main Mast	Test 1-- Light Pollution	Physical		B, C, ships lighting systems coordination with the Bridge						Night	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
14	NA	NA	01.02.01.06	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Fan Main Mast	Test 2-- Ventilator performance	Physical		B, C		Ideally someone would visually identify times when the sensors have condensation/frost and compare how quickly they dry off without cleaning. It will also be important to have full clear days and nights to look at the impact of ventilation on infrared loss.			fog, chilly mornings, sea spray conditions & also at least one clear sky day	Day or Night	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
15	NA	NA	01.02.01.07	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Fan Main Mast	Test 3-- Shading	Physical		B, C, Will require some kind of survey of where obstacles are relative to instruments (elevation & azimuth angles of a "horizon")					need sunny conditions with different ship orientations and low and high sun angles	Day	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
16	NA	NA	01.02.01.08	Science	Atmospheric Sensors	Kipp and Zonen Pyranometer SMP-21 w/CVF-4 Ventilation Fan Main Mast	Test 4-- Tilt Correction	Physical		B, C, need SPN1 and SMP-21 radiometers & ship motion info (pitch, roll, yaw)			ideally a long timeseries to be able to do statistical comparisons in different ship motion and clear sky conditions. We want to check the influence of corrections versus averaging, etc.		sunny and/or partially cloudy conditions, and preferably some rougher seas with a variety of pitch and roll	Day	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
17	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Kipp and Zonen Pyrgeometer SGR-4 w/CVF-4 Ventilation Fan Primary Radiometer Mast	Performance, Precision, and Data Quality	Physical		B, C					fog, chilly mornings, sea spray conditions & also at least one clear sky day	Day	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
18	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Kipp and Zonen Pyrgeometer SGR-4 w/CVF-4 Ventilation Fan Main Mast	Performance, Precision, and Data Quality	Physical		B, C					fog, chilly mornings, sea spray conditions & also at least one clear sky day	Day	Laura Riihimaki (CIRES, NOAA GML G-RAD)	
19	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Vaisala Present Weather FD71P	Performance, Precision, and Data Quality	Physical		B, C							SAMOS	
20	NA	NA	~~01.02.01.04~~	Science	~~Atmospheric Sensors~~	~~RM Young Rain Gauge 50202~~	~~Performance and Data Quality~~			~~B, C~~							~~SAMOS, Elizabeth Thompson (NOAA PSL)~~	
21	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Optical Scientific APG-815-DS	Performance, Precision, and Data Quality	Physical		B, C							SAMOS, Elizabeth Thompson (NOAA PSL)	
22	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Ship-supplied Gill 2D Ultrasonic Anemometer Port	Performance, Precision, and Data Quality	Physical	IMACS to CORIOLIX	A, B, C							SAMOS	
23	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Ship-supplied Gill 2D Ultrasonic Anemometer Starboard	Performance, Precision, and Data Quality	Physical	IMACS to CORIOLIX	A, B, C							SAMOS	
24	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Ship-supplied RM Young 86000 2D Ultrasonic Anemometer	Performance, Precision, and Data Quality	Physical	IMACS to CORIOLIX	A, B, C							SAMOS	
25	NA	NA	01.02.01.04	Science	Atmospheric Sensors	Gill 3D Ultrasonic Anemometer MET Mast	Performance, Precision, and Data Quality	Physical		B, C							SAMOS, Elizabeth Thompson (NOAA PSL)	

RCRV Regional Class Research Vessels

Oregon State University

Operation and Science Trials

Trials Cruise	Operations and Science Focus Areas	Days (MOB & Sea)*	Ports	Chief Scientist(s)/ Lead MarTech	Expert Support
Deepwater Trials Leg#1	EM2024 & EM304 patch tests, ADCP speed testing and centerboard position effects, noise monitoring, and sonar performance, bubble sweep-down	12	Gulfport to San Juan, Puerto Rico	Ethan Roth/ Emily Shimada	J. Hummon (ADCP), MAC, J. Beeson, KUTI, MacGregor
Deepwater Trials Leg#2	Deep-water OHS equipment (hydrographic and ocean winches, portable and main A-frames, spooling 6 km, auto features), TOPAS, USBL	8	San Juan to San Juan, Puerto Rico	Ethan Roth/ Emily Shimada	J. Beeson, MacGregor tech, MarTechs
Transit to Homeport	Satellite comms, anti-roll tank tuning, workboat, atmospheric and flow-through sensors, CTD/rosette, datapresence (CORIOLIX)	23	San Juan to Panama City to Newport	Maureen Conte/ Brandon D'Andrea	C. Reimers, C. Romsos, MarTechs
General Operations	Crew training, in port winch spoil swapping, centerboard sensor swap, van integration, crane operations, docking, safety and emergency drills	10	Newport to Newport	William Fanning/ Brandon D'Andrea	Additional Crew and MarTechs
Science #1-Physical	Regional validation and intercalibration of atmospheric and flow-through sensors, ADCP, T-chain towing, dynamic positioning, marine mammal observations	15	Newport to Newport	Jack Barth/ Emily Shimada	NOAA and SAMOS, MMI?
Science #2-Biological	EK-80 validation, towing of different net systems including MOCHNESS, ISIS, sample collection work flow, science freezers and refrigerators, Hazmat, incubator pumps	15	Newport to Newport	Carin Ashjian, Maria Kavanaugh/ Sam Richardson	EK-80 Expert
Science #3-Chemical	Over-boarding of OOI equipment (e.g., AUVs, gliders, small moorings), operate all ship sensors over transects, use lab vans, fume hoods, CTD and discrete sample collections	15	Newport to Newport	Ian Black and Tyler Peterson	J. Fram, OOI Techs, K. Buck
Science #4-Geological	Multiple van integration, maximum science loading, synthetic tension members, PCDRM installation, piston coring, multicoring, multibeam data collection, EM 712 on transducer pole	20	Newport to Newport	Mo Walczak, Jeff Beeson/ Sam Richardson	Allied Technicians, MARSSAM
Science #5-Education & Outreach	Small ROV operations, Telepresence, USBL, Personnel van integration, public tours	10	Newport to Newport	Andrew Thurber, Tracy Crews/ Tyler Peterson	ROV support team, D. Coleman (URI)

*Phase IV Schedule – will be adjusted based on final cruise plans

Webcam 01
Webcam 02
Webcam 03
Webcam 04
Webcam 05
Webcam 06
Webcam 08

RVOC Update

Regional Class Research Vessel Program- Oregon State University

May 01, 2024