



THE UNIVERSITY OF RHODE ISLAND GRADUATE SCHOOL OF OCEANOGRAPHY



Oregon State University College of Earth, Ocean, and Atmospheric Sciences





Operating Institutions



R/V Taani

R/V Resolution

R/V TBD



Oregon State
University



THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI.

THE
UNIVERSITY
OF RHODE ISLAND
GRADUATE SCHOOL
OF OCEANOGRAPHY



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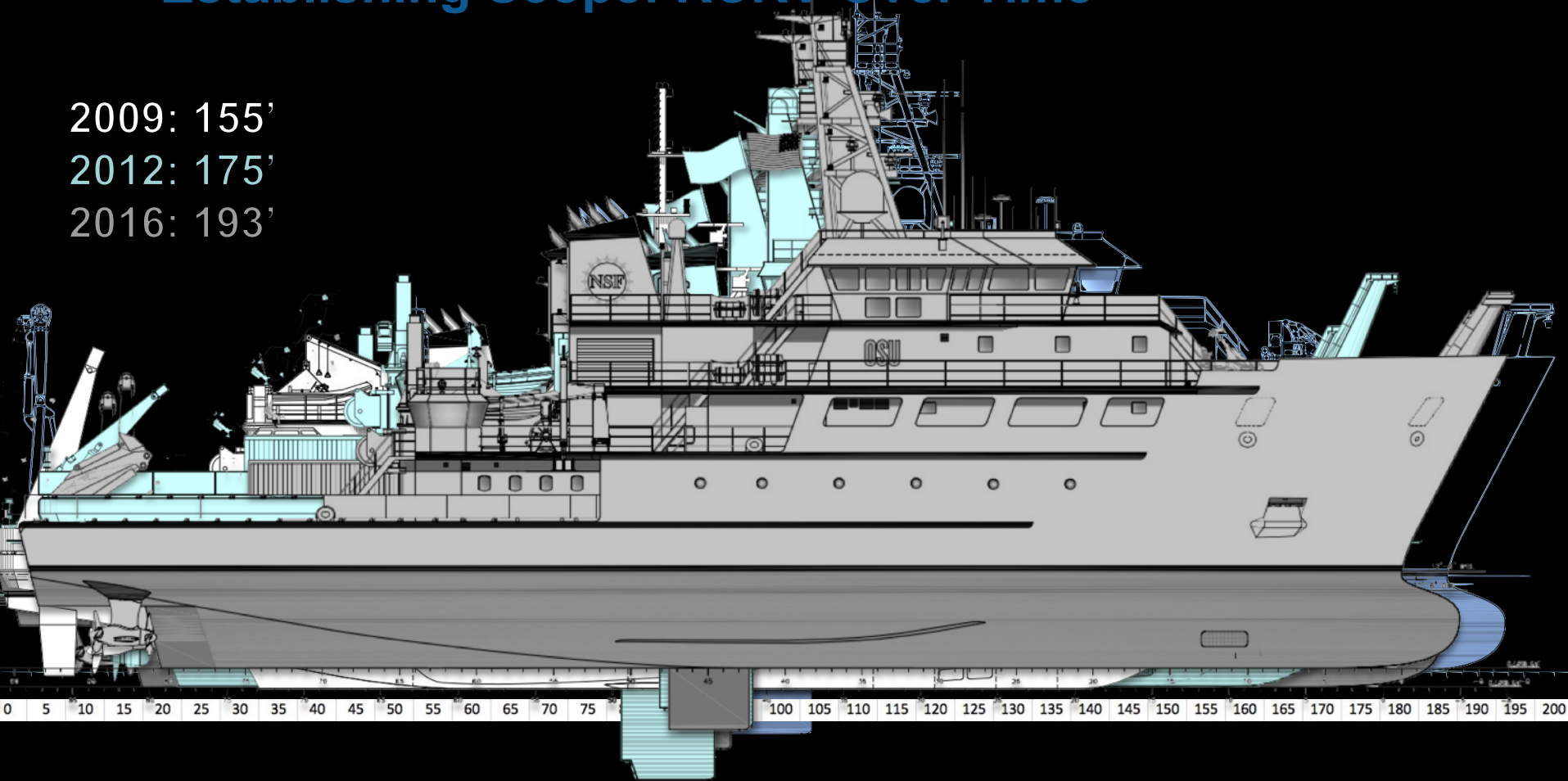
THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI.

Establishing Scope: RCRV Over Time

2009: 155'

2012: 175'

2016: 193'





R/V Resolution Particulars

- Length overall199 ft
- Beam 41 ft
- Draft @ amidships12.5 ft
- Regulatory Tonnage .1549 GT
- Cruise speed11 kt
- Max speed13 kt
- Range6600 nm @ 12 kts
- Endurance21 days min.
- Dynamic Positioning.....ABS DP-1
- Science/Tech Berths 16
- Crew Berths13
- Retractable Centerboard (drop keel)
- A-frame dimensions25'H x 20'W
- Multibeam SONAR....EM304, 2040
- Number winches3
- Ice ClassABS C0



Over the Side Handling Equipment

Main Crane

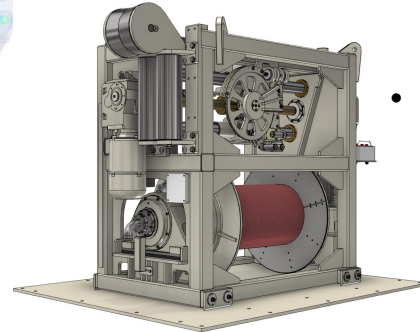
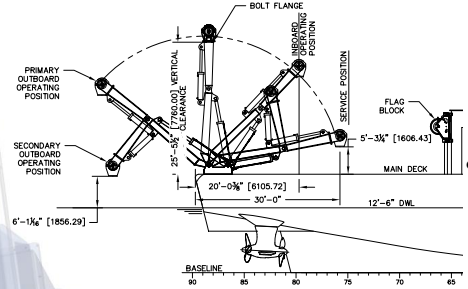
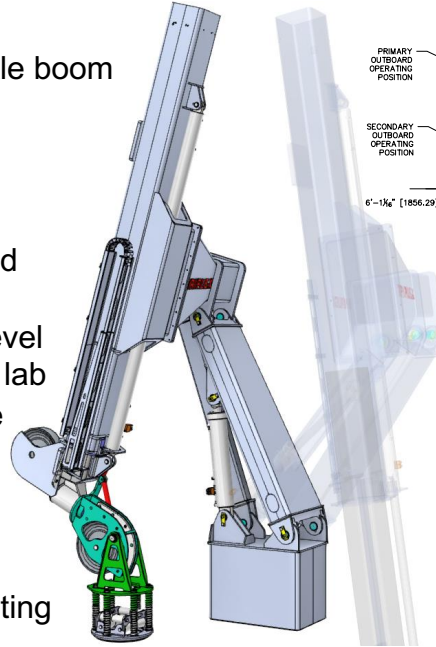
- Folding, telescoping, knuckle boom
- 55 ft Max reach
- 35,000 lb at 20 ft
- Towing capable

Launch and Recovery System

- Hands Free deployment and recovery
- Automated deck to water level
- Automated deck to internal lab
- Vertical and towing capable

Stern A-Frame

- Double-Articulating
- 25 ft from deck to center
- 20 ft width between legs
- Rotating cross beam w/ bolting flange



Winches

Oceanographic

- Heave Compensation
- Auto Pay in/Pay out
- DLT 60,000 lbf
- Max pull 34,000 lbf
- 10,000 Meters

Hydrographic

- Heave Compensation
- Auto Pay in/Pay out
- DLT 11,600 lbf
- Max pull 3,400 lbf
- 10,000 Meters

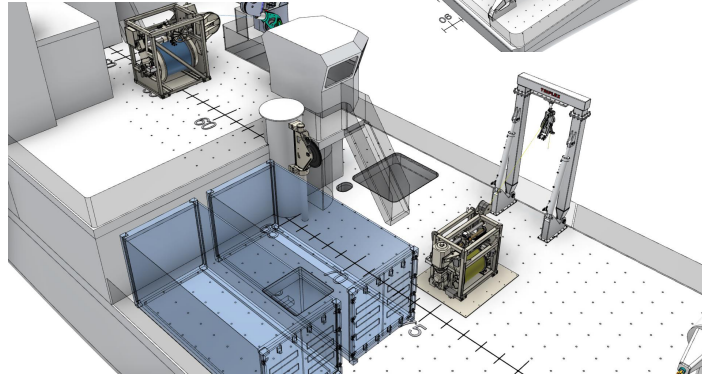
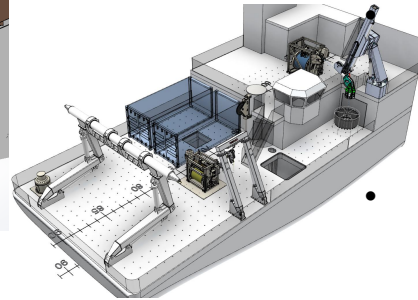
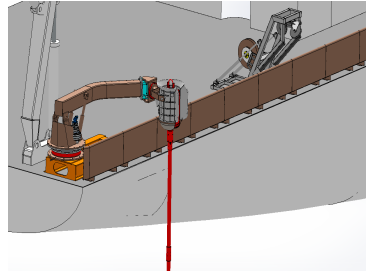
Support Equipment

Vans:

- Personnel X2
- Cold Stores X3
- Chem. Storage X3

Deck Equipment:

- Portable A-frame X3
- Portable Crane X3
- Portable Winch X3
- Transducer Pole X3
- Workboat/Skid X3
- PCDRM Coring X1
- Deck/Frame X3
 - Tuggers
- Blocks and Spares X3



Tension Members

Oceanographic Winch

- 9/16", 3x19 Wire Rope
- .681" EO Mech. Cable
- 5/8" Plasma 12 Strand
- Hydrographic Winch
 - .393 EO Mech. Cable
 - 3/8" Plasma HiCo 12
 - Cortland EV701272
 - 3 copper
 - 3 Fiber
 - Steel Tube
- Portable Winch
 - .322" EM Cable

Centerboard

- Spare Foot X1

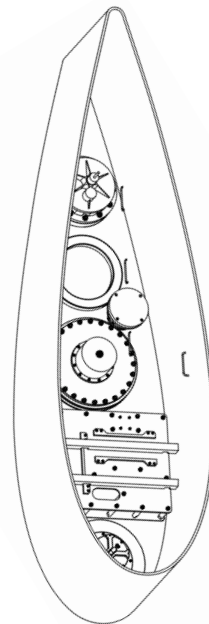
Acoustic Suite

Sonar Flat Forward

- Kongsberg EM304: 0.5° transmit x 1.0° receive
- Kongsberg EK80: 38 kHz, 70 kHz, 120 kHz, 200 kHz (all split beam)
- Kongsberg TOPAS subbottom profiler
- Primary 12 kHz transducer
- Sonar self-noise hydrophones (3)
- 3 spare 19" holes for transient transducers

Centerboard

- Kongsberg EM 2040
- Teledyne RDI 75 kHz Ocean Surveyor ADCP
- Teledyne RDI 300 kHz Workhorse ADCP
- Secondary 12 kHz transducer
- (1) spare 12inch penetration for transient transducers
- Self-noise hydrophone (1)
- Reson SVP-70 Sound Speed Sensor

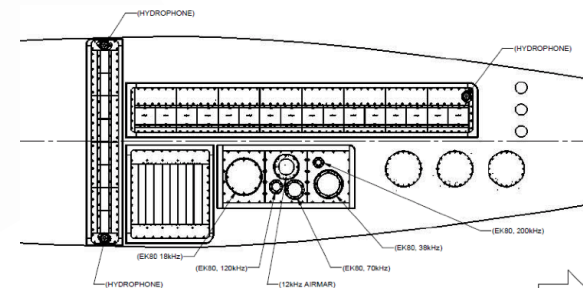


Other Systems

- Benthos UDB-9000
- Knudsen 3260
- USBL System

Portable Units and Spares

- EM 712 2° x 2°
- EM 2040C
- EK80 Complete
- Sonar Calibration Kit





Sensors



Underway Surface Seawater Sensors

- 7x SBE-45 Thermosalinograph
- 7x SBE-38 Intake Temperature
- 10x SBE-43 Oxygen Sensor
- 12x ECO-Triplet (3 configurations)
- 4x WetStar Fluorometer
- 10x C-Star Transmissometer
- 3x TBD pCO₂*
- 4x SUNA V2 Nitrate Sensor
- 4x SeaFET V2 pH Sensor
- 4x Flow Control System

CTD Sensors

- 6x SBE 911 w/Dual T/C Sensors
- 8x Biospherical PAR (Profiling)
- 10x shared with Underway SBE-43 Oxygen Sensor and C-Star Transmissometer
- 7x ECO Fluorometer FLRTD
- 7x SBE-18 pH

Atmospheric Sensors

- 7x Biospherical PAR (Reference)
- 4x Vaisala PTU330
- 4x Vaisala WXT536
- 8x Kipp and Zonen Pyranometer
- 8x Kipp and Zonen Pyrgeometer
- 3x Vaisala Present Weather FD71
- 4x RM Young Rain Gauge
- 13x Gill 2D & 3D Ultrasonic Anemo
- 16x GoPro (Sky, Sea Conditions)
- 3x ROSR Radiometer*
- 3x Vaisala CL51 Cloud Radar*
- 3x Picarro G2401 Atmos Gases*
- 4x HyperSAS Systems/HyperOCR

Optional Underway Surface Seawater Sensors (at science request)

- 3x WETLabs AC-S
- 3x TBD Particle Concentration & Particle Size Distribution

Other Sensors

- 3x TBD Inspection Class ROV
- 6x Kongsberg Seapath 380+
- 3x Centerboard IXBlue Fiber GY
- 3x WaMoS Wave Radar

* Includes replaceable spares

Vessel Personnel Capacity

After discussion with OI's, academic fleet and industry the suggested operational crew includes :

Bridge

- Master
- Chief Mate
- Second Mate

Engineering

- Chief Engineer
- 1st Engineer
- 2nd Engineer
- Electrotechnical Engineer

Deck

- Bosun
- AB1
- AB2
- AB3

Galley

- Chief Steward
- Assistant Cook

Marine Technicians

- MarTech. 01
- MarTech. 02

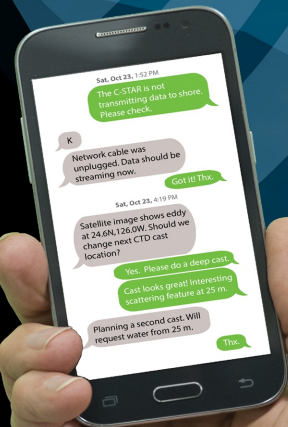
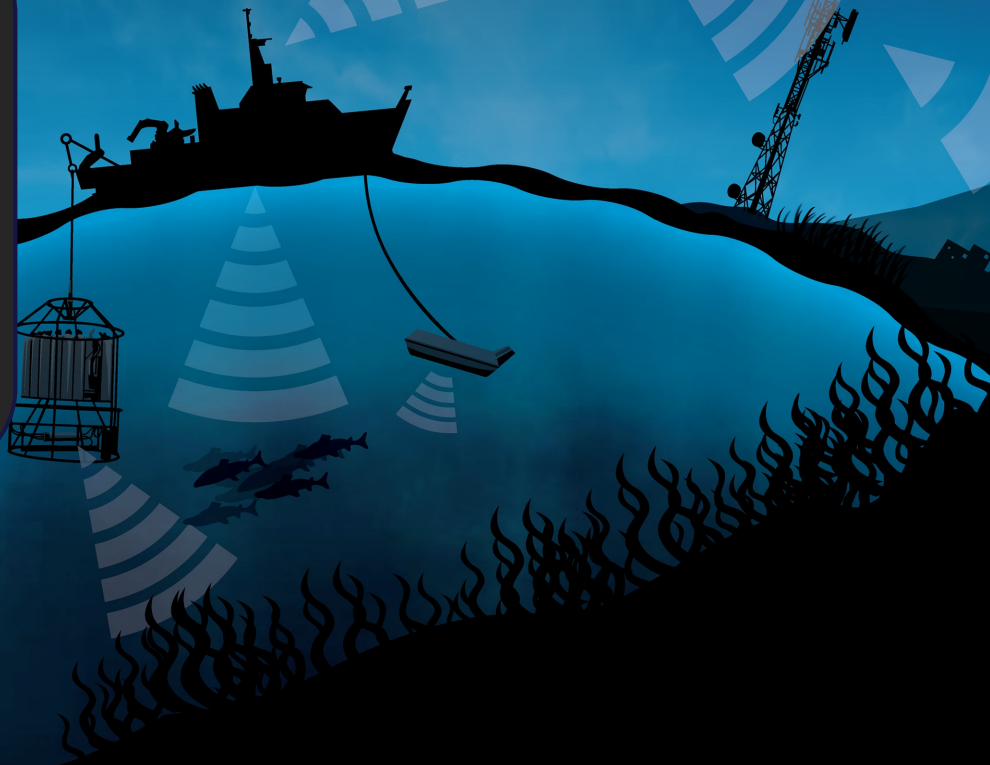
Crew:	13
Technicians:	02
Science:	14
W/ Personnel Van	18



Data•pres•ence

noun

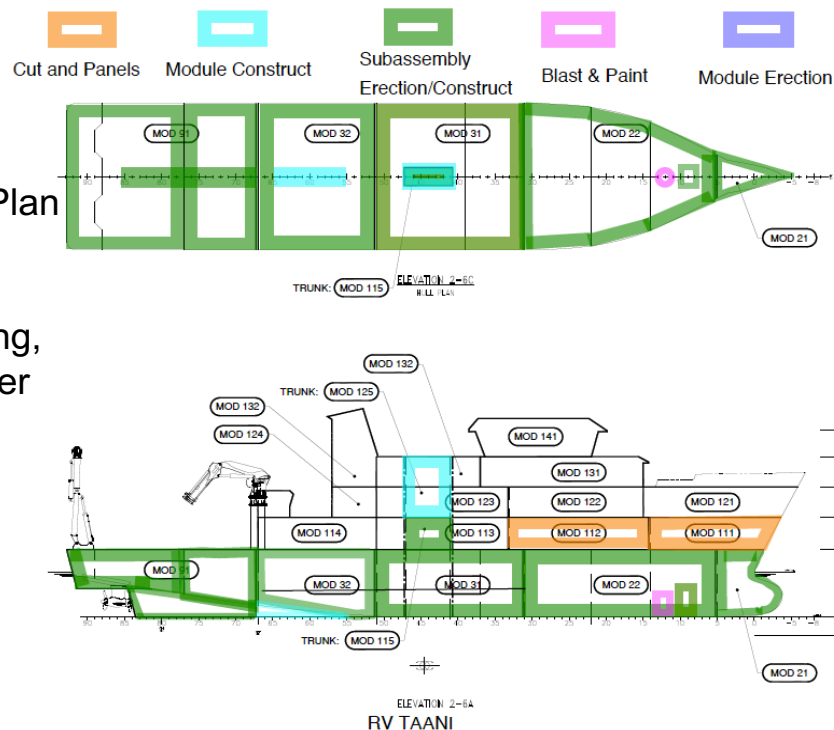
Technologies developed for research vessels to enable virtual participation, situational awareness and adaptive sampling at sea; the ability to integrate data from a broad suite of ocean and meteorological sensors and facilitate quality real-time data collection and data visualization to inform the science mission, enable shore side participation, and encourage education and community outreach



R/V Taani Build Update

Under Construction

- **Module 21**
 - Shell Plate Fitting
- **Module 22**
 - Interior Weld out complete, awaiting foundations. Plan Blast/Paint 20th November
- **Module 31**
 - Main deck and Domestic Equipment room pipefitting, Equipment Foundations. Plan Blast/Paint November
- **Module 32**
 - Framing Weld out continues.
- **Module 91**
 - Side shell plating installation.
- **Module 111**
 - Assembly started on outside plating.
- **Module 112**
 - Cutting started last week.



R/V Taani



Mod. 91

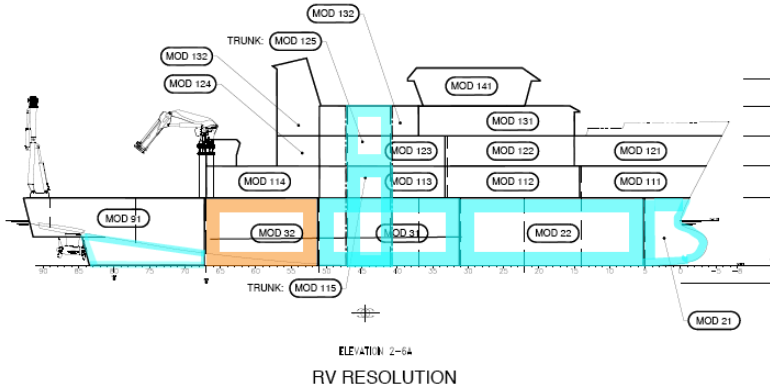
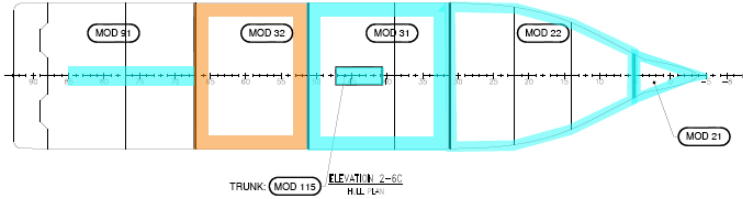
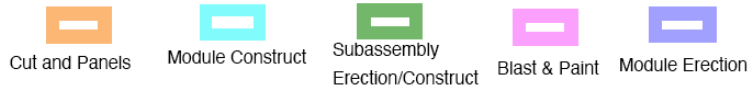


Mod. 22



Mod. 21

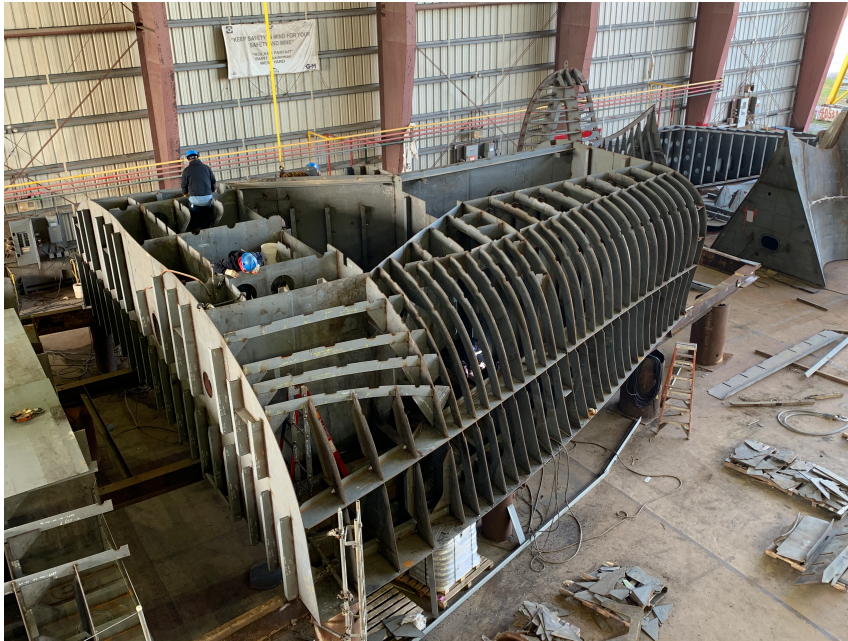
R/V Resolution Build Update



Under Construction

- **Module 21**
 - Shell Plate Fitting
- **Module 22**
 - Frame fit, drop down and Jet drive thruster foundations and sub assembly in process
- **Module 31**
 - Shell plate fitting started. Centerboard steel structure in process, FAT of assembly on 11/22. AI portion of centerboard in construction.
- **Module 32**
 - Panel Fabrication Complete.
- **Module 91**
 - Start 11/25

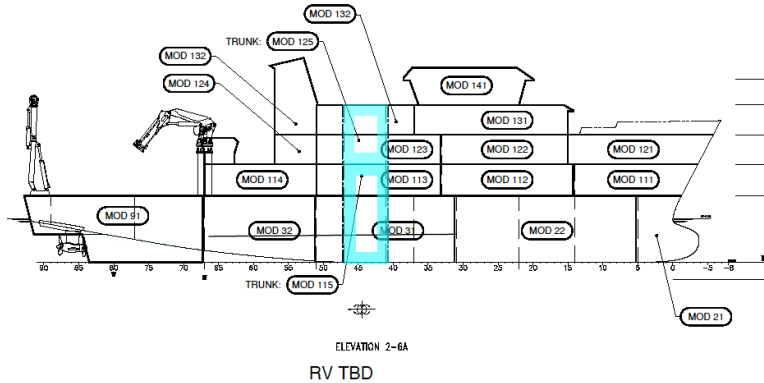
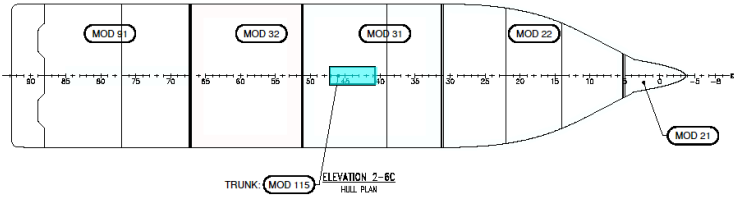
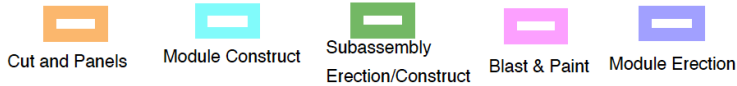
R/V Resolution



Mod. 22



Mod. 32



Construction Plan

- Schedule approved. Planned start of Construction: 03 March 2020
- Projected Keel-Laying Date: 03 March 2020

Engine and Drives



Caterpillar C-32 Factory Test 5/14/19



Schottel STP Twin Propeller Z-Drives

Over the Side Equipment



V1 Hydro Winch
FAT 11/15/19,
Serbia

LARS FAT 9/12/19,
Norway

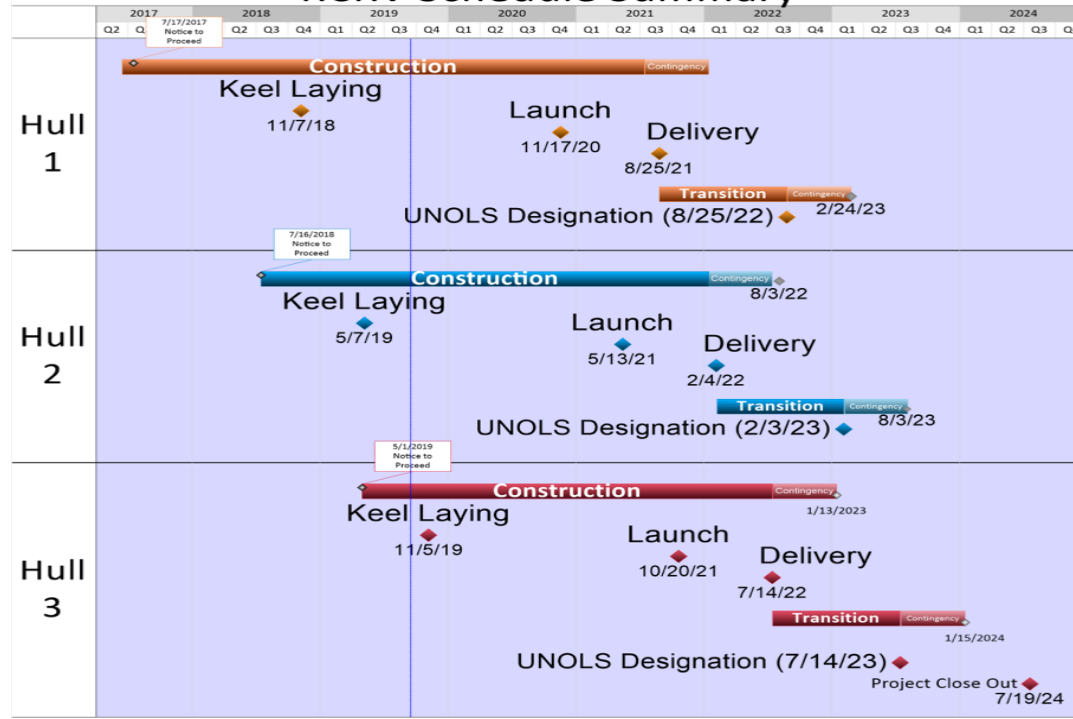






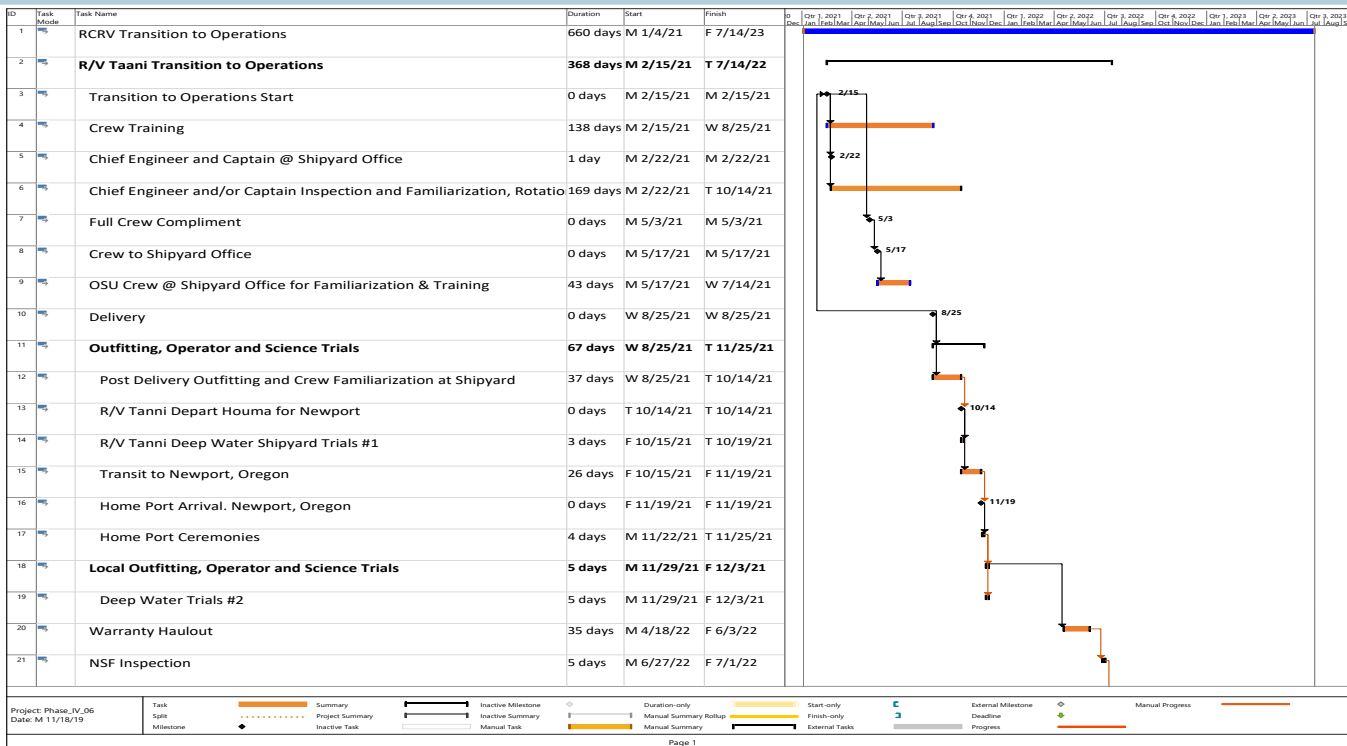
RCRV Class Delivery Timeline

RCRV Schedule Summary



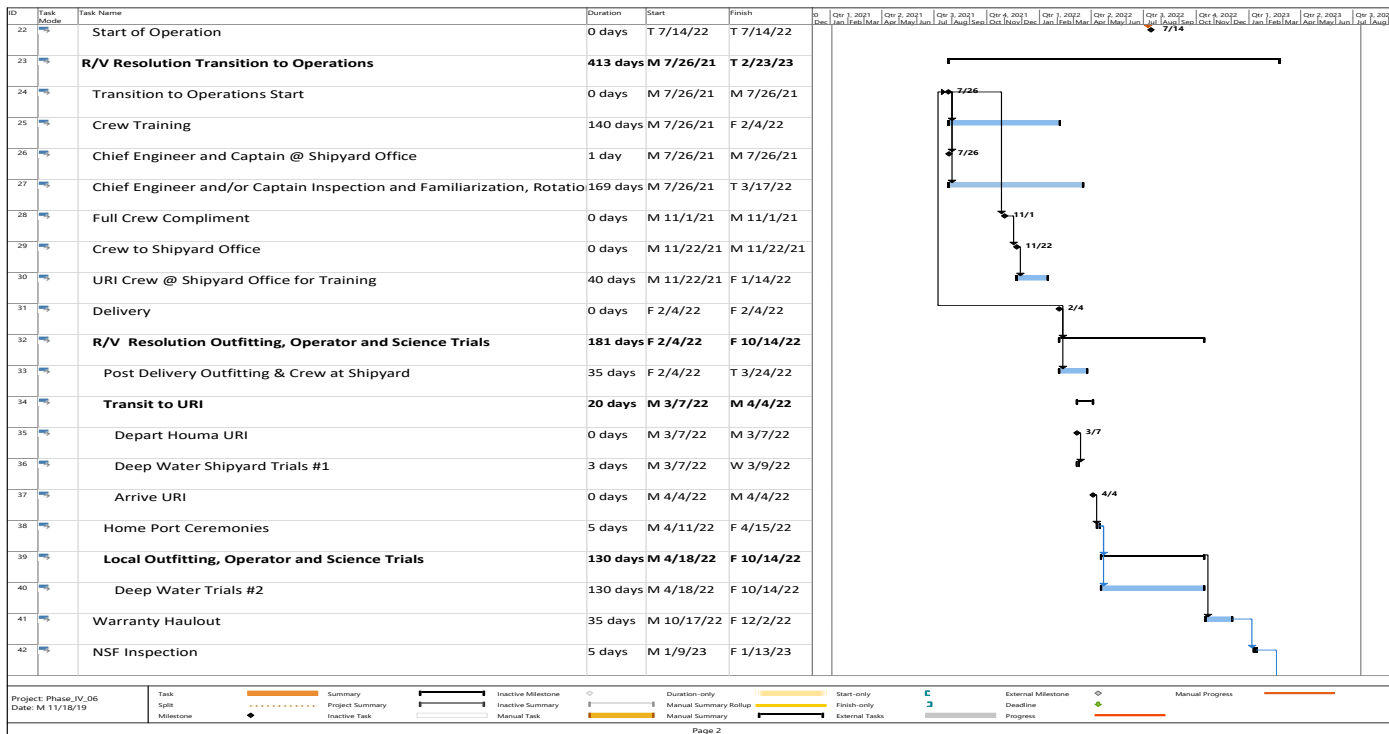


Transition to Operation



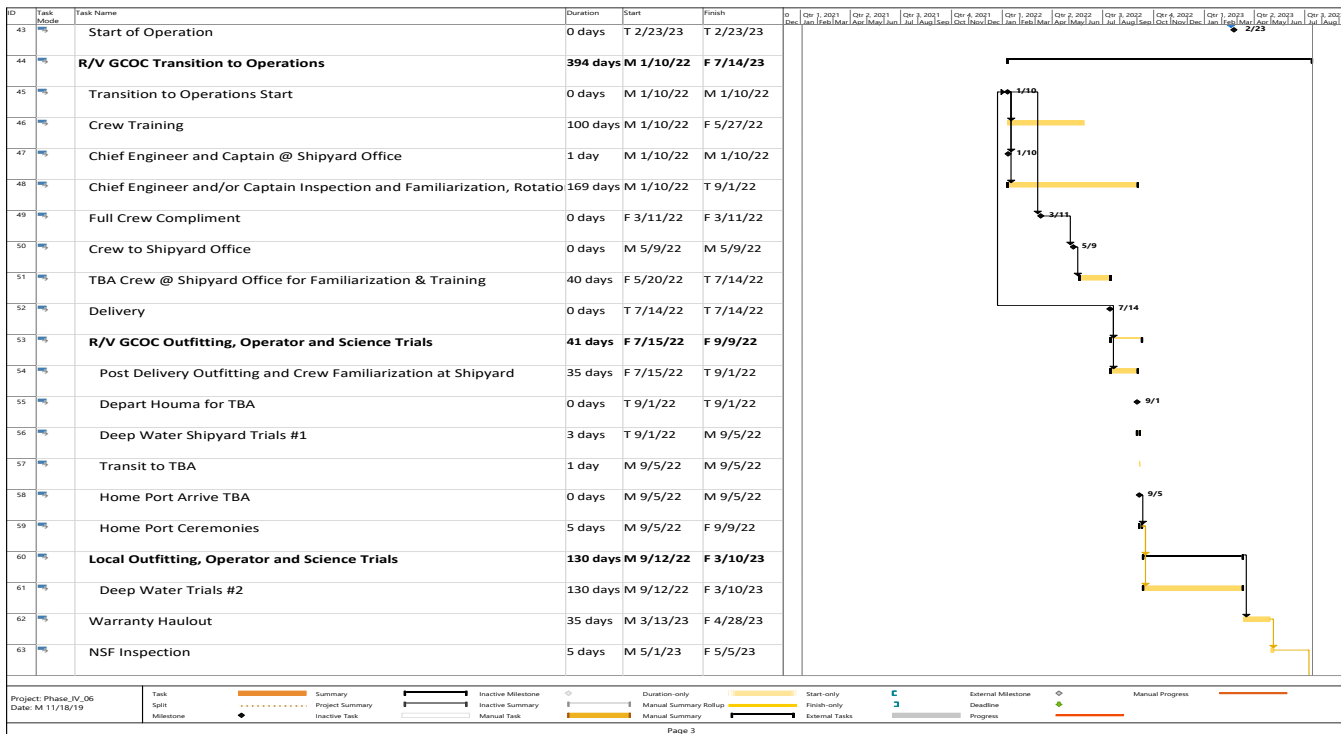


Transition to Operation





Transition to Operation





Webcams



[RCRV_Cam-01](#)

[RCRV_Cam-02](#)

[RCRV_Cam-03](#)

[RCRV_Cam-04](#)



