RVTEC Ship/Shore Communications Subcommittee

Goal Statement

"The goal of the ship/shore communications subcommittee is to help the federal funding agencies develop a viable plan for the US Academic fleet's ship/shore communications that will help the ships meet the growing demands of internet connectivity for general communications and telepresence."

- Define/quantify day to day bandwidth needs
- Give guidance on infrastructure and models for telepresence
- Create ideas/plans on how to meet the above

RVTEC Ship/Shore Communications Subcommittee

Recommendations - Three-Year Plan

- Keep current system of HSN as primary & FBB back-up
- Increase HSN bandwidth by 4x & improve infrastructure
- Thoroughly test GX as it starts coming online
- Monitor bandwidth and create a Management Plan
- Move ships toward Level 3 telepresence capability as need and budget allow
- Meet annually at RVTEC
- Review after 3 years

RVTEC
Ship/Shore Communications Subcommittee

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Document provides:

- Descriptions of each level of telepresence
- Real examples of each level of telepresence
- Proposal Preparation and Pre-cruise Planning
- Implementation at Sea
  - Guidance for the Science Party
  - Guidance for the R/V Operators and Marine Technicians
- Community Resources and Contacts
- UNOLS Ships – Satellite Bandwidth Capabilities
- Mobile Telepresence Unit (MTU) Description

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Level 0: Minimal connectivity

Requirements:

Bandwidth: 256Kbps ship-to-shore (normal HiSeasNet)

Shipboard Equipment: Computer with integrated camera and associated software

Shipboard Personnel: A host of the session is required

Shore-based Equipment: None

Shore-based Personnel: None

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Level 1: Public Viewing (live broadcast to the Internet)

Requirements:

Bandwidth: 1.5-2 Mbps (ship-to-shore), 1 stream of SD video

Shipboard Equipment: Mobile Telepresence Unit

Shipboard Personnel: 0.5-1 shipboard personnel dedicated to organizing the broadcast and operating the camera and MTU

Shore-based Equipment: Dedicated server and possibly a video streaming service provider such as a Content Delivery Network

Shore-based Personnel: Part-time technical personnel to set-up and monitor the equipment feeding the stream to the website

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Level 2: Remote Learning, Outreach, and Media Events

Requirements:

Bandwidth: 1.5-2 Mbps (ship-to-shore) and 256Kbps (shore-to-ship). 1 stream of SD video; 2-way audio communication

Shipboard Equipment: Mobile Telepresence Unit

Shipboard Personnel: 0.5-1 shipboard personnel dedicated to organizing the broadcast and operating the camera and MTU, and coordinating with shore-based personnel for planned outreach and remote science activities

Shore-based Equipment: Dedicated servers and video teleconferencing systems, in addition to website broadcast equipment

Shore-based Personnel: A part time technician and potentially a part-time educational coordinator

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Level 3: Telepresence-Enabled Science

Requirements:

Bandwidth: 6-20 Mbps (ship-to-shore) and at least 512Kbps (shore-to-ship)
Usually more than 1 stream of HD video, 2-way audio communication

Shipboard Equipment: An advanced telepresence system or sophisticated MTU

Shipboard Personnel: At least 1 dedicated telepresence technician onboard to manage the hardware and support the audio/video system; at least 1 dedicated member of the science party to coordinate the telepresence operation

Shore-based Equipment: Advanced video broadcast, audio, and data server equipment and software, capabilities such as those at Exploration Command Centers or Inner Space Center facilities

Shore-based Personnel: Full-time technical personnel and potentially a part time science party coordinator and/or educational outreach coordinator.

Mobile Telepresence Unit (MTU) Description

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TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Next Steps:

- Collect more feedback and finish edits to document; Post document on UNOLS web site
- Organize a webinar for the community to discuss telepresence
- Develop a companion document for education/outreach and instructions for proposal development
- Provide information at RVTEC, AGU, Ocean Sciences, etc
- Prepare for February NSF Ocean Sciences proposal submissions for PIs who wish to incorporate telepresence into their ship time requests

Ship-to-Shore Telepresence

National Deep Submergence Facility

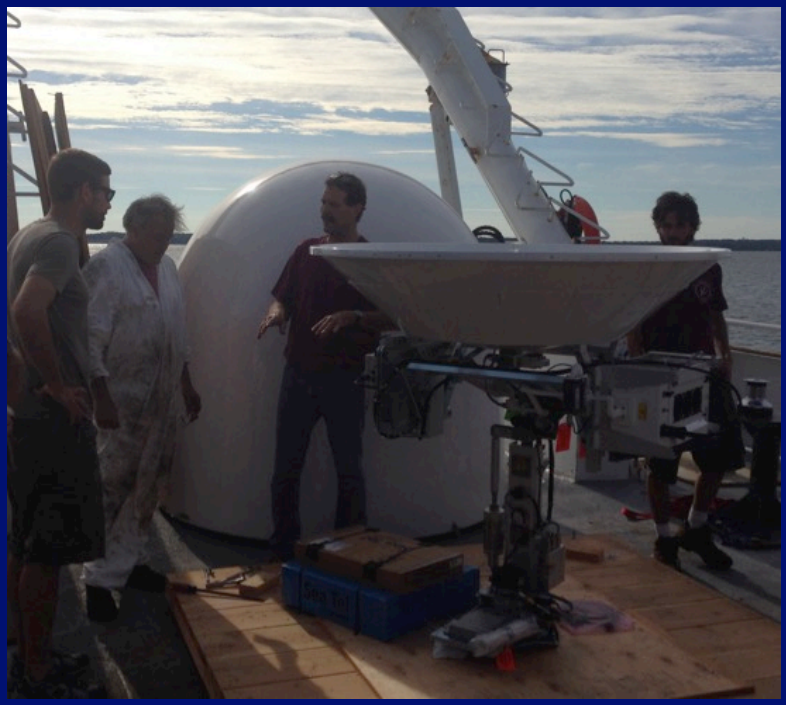
Mobile Telepresence Unit (MTU)

15:22:32
15:22:34
HD

DeepSeaVideo.com

VISIONS'11 - ROPOS Dive 1470:
Deploy and Recover Instruments / Survey Cable Routes
Live Stream
Preview
Program
RoboCam 1
RoboCam 2
Mini Zeus
Media Player 2
00:00:00:00
plura

OCEAN NETWORKS CANADA

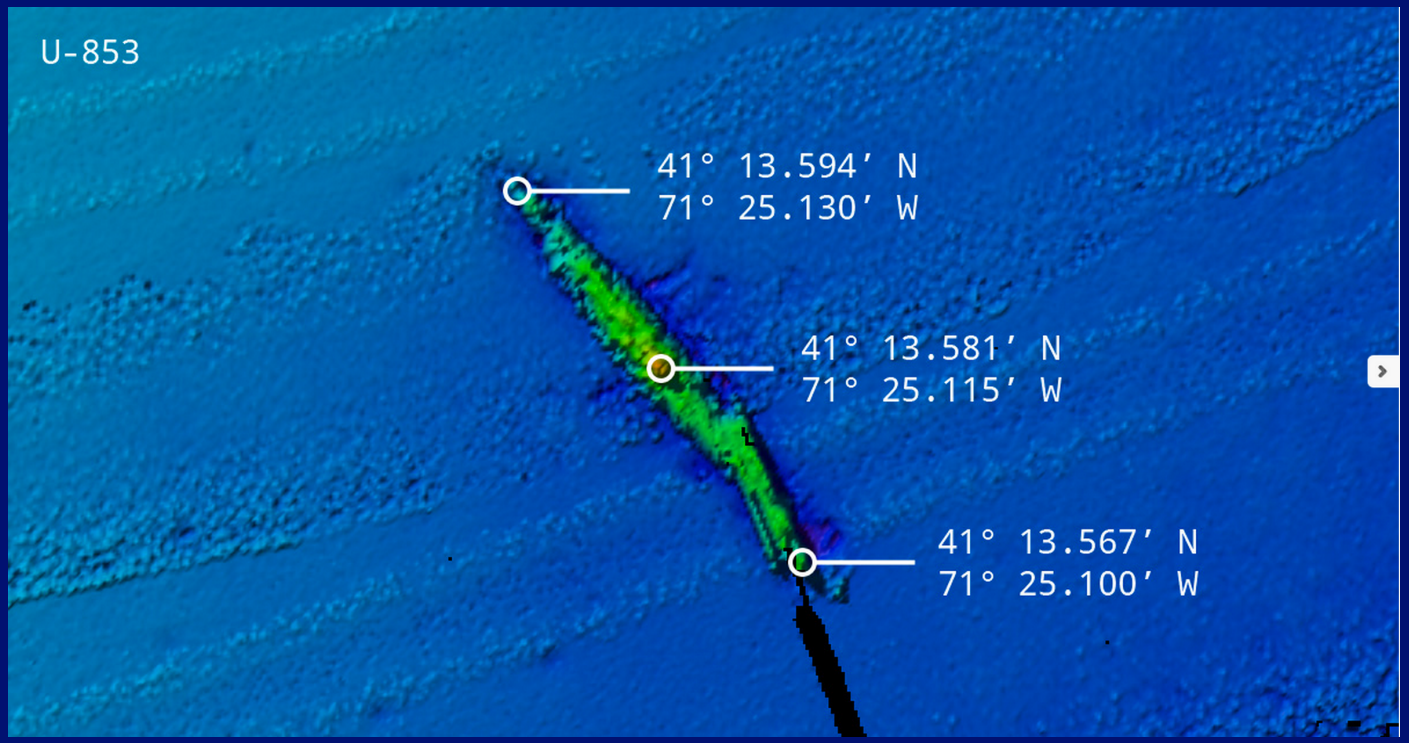


A Telepresence System for the R/V *Endeavor*

iDIRECT

HLRM 19-3S
DEEP REEF

R/V ENDEAVOR


U-853
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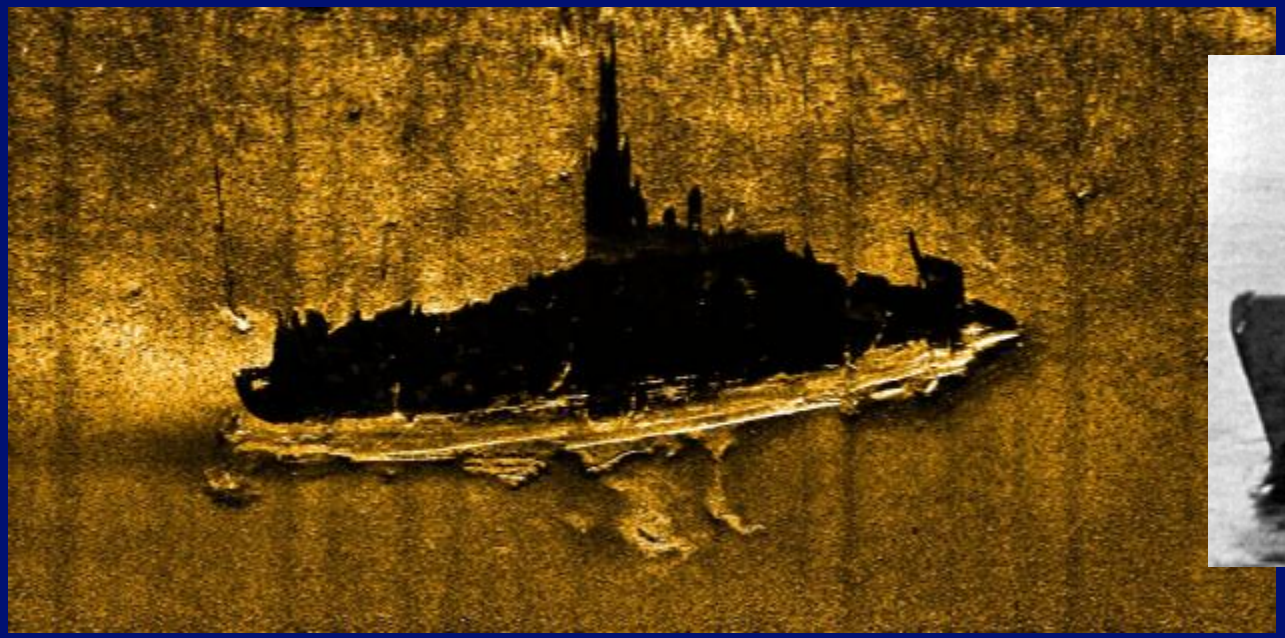
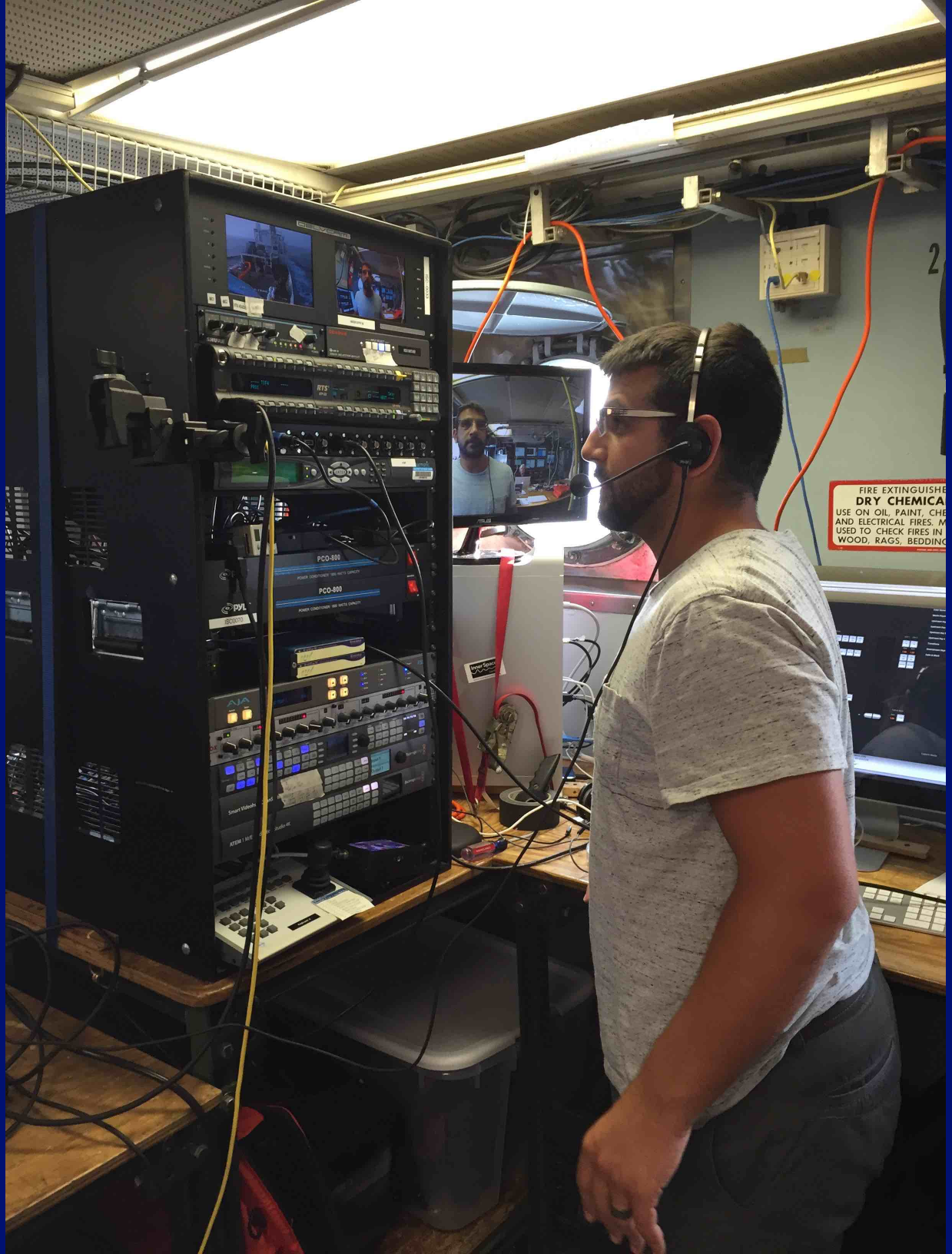
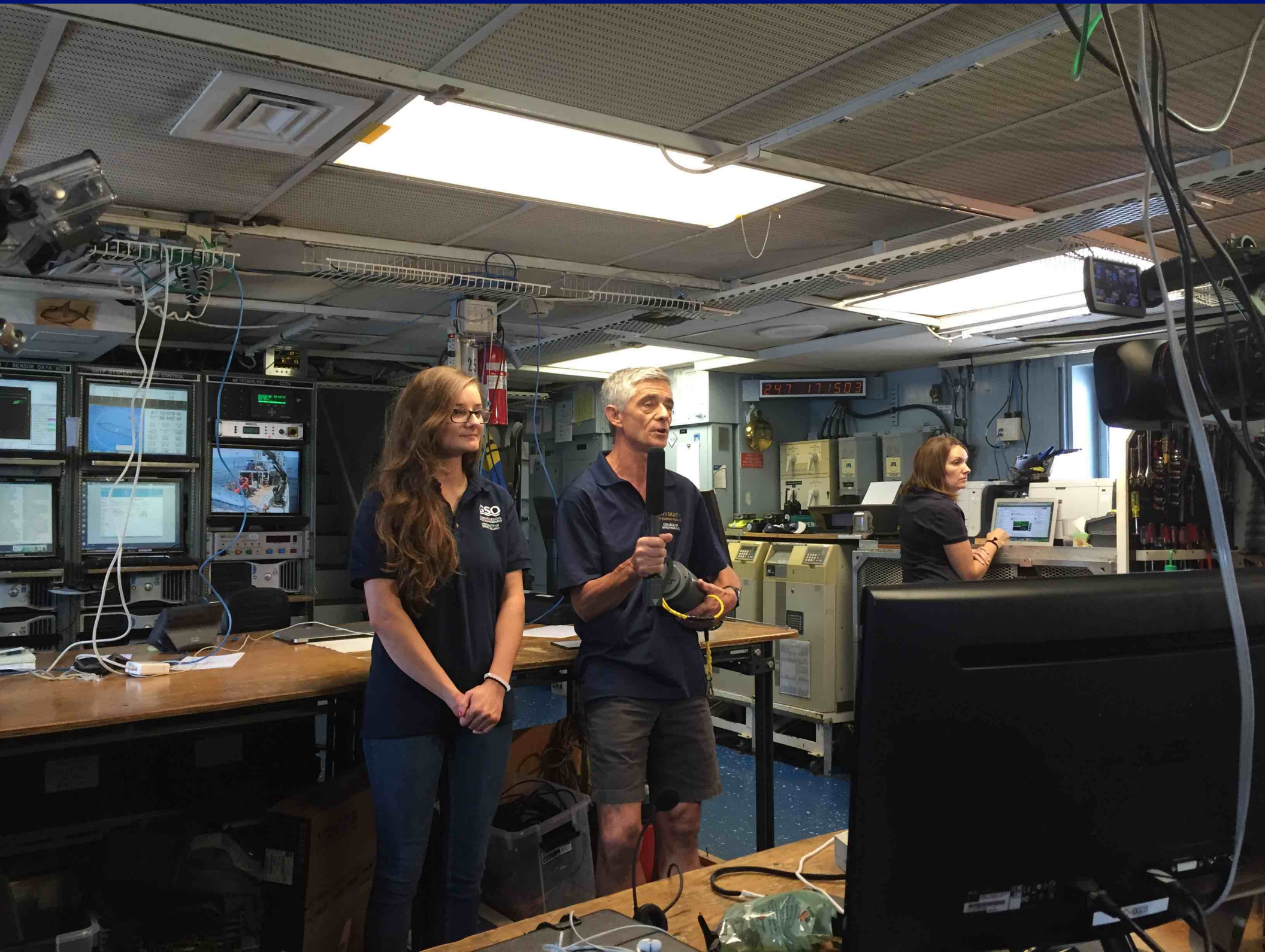
71° 25.130’ W
41° 13.581’ N
71° 25.115’ W
41° 13.567’ N
71° 25.100’ W




PCO-800
PCO-800
AJA
FIRE EXTINGUISHE
DRY CHEMICA
USE ON OIL, PAINT, CHE
AND ELECTRICAL FIRES. M
USED TO CHECK FIRES IN
WOOD, RAGS, BEDDIN

EMERGENCY SHOWER
COMPACTABLE
TRASH ONLY

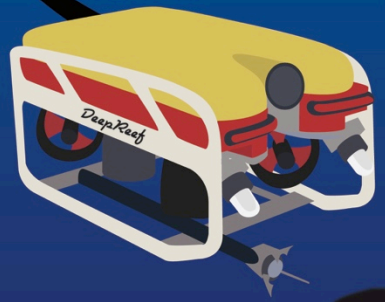


EXPLORE LIVE!

SEPTEMBER 3-5, 2015

Did you know that one of the final battles of World War II happened just seven miles off of Block Island? For one week only in September 2015, we're going to explore the remnants of the Battle of Point Judith, right here in Rhode Island. With a state-of-the-art remotely operated vehicle and HD cameras, alongside scientists, divers, and archaeologists, the Inner Space Center and R/V Endeavor are making history and we want you there with us for Explore With Us: Rhode Island Shipwrecks.

FOR MORE INFORMATION VISIT INNERSPACECENTER.ORG/RIWRECKS



SHOWTIMES:

11:00 AM, 1:00 PM, 7:00 PM

GSO

Inner Space center

Rhode Island PBS

University of Rhode Island

Broadcast live on Rhode Island PBS and online at innerspacecenter.org