2013
Icebreaker Session

RVTEC Annual Meeting
November 18-21, 2013

R/V *Walton Smith*

Aubri Vail

UNIVERSITY OF MIAMI

ROSENSTIEL SCHOOL of MARINE & ATMOSPHERIC SCIENCE

Marine Technology Group

- RV WALTON SMITH
- RV OCEAN STALWART
- RV SEWARD JOHNSON
- MV EXPLORER OF THE SEAS
- MV EQUINOX
- MV ALLURE OF SEAS

2013

R/V *Clifford A. Barnes*

Brandi Murphy

R/V Clifford A Barnes, UW

- 85 Sea Days to date
- 5 to go
- 31 TBD funded days
- 21 shipyard/non-op

- Increased data demands result in high FBB usage
- Field acceptance test of 600kHz ADCP system
- Sailed 1000th cruise since operation at UW in 1983
- Testing pole mounted Kongsberg 3002

R/V *Thomas G. Thompson*

Brandi Murphy

R/V Thomas G Thompson, UW

- 175 successful sea days to date
- 34 transit days
- 40 Non op

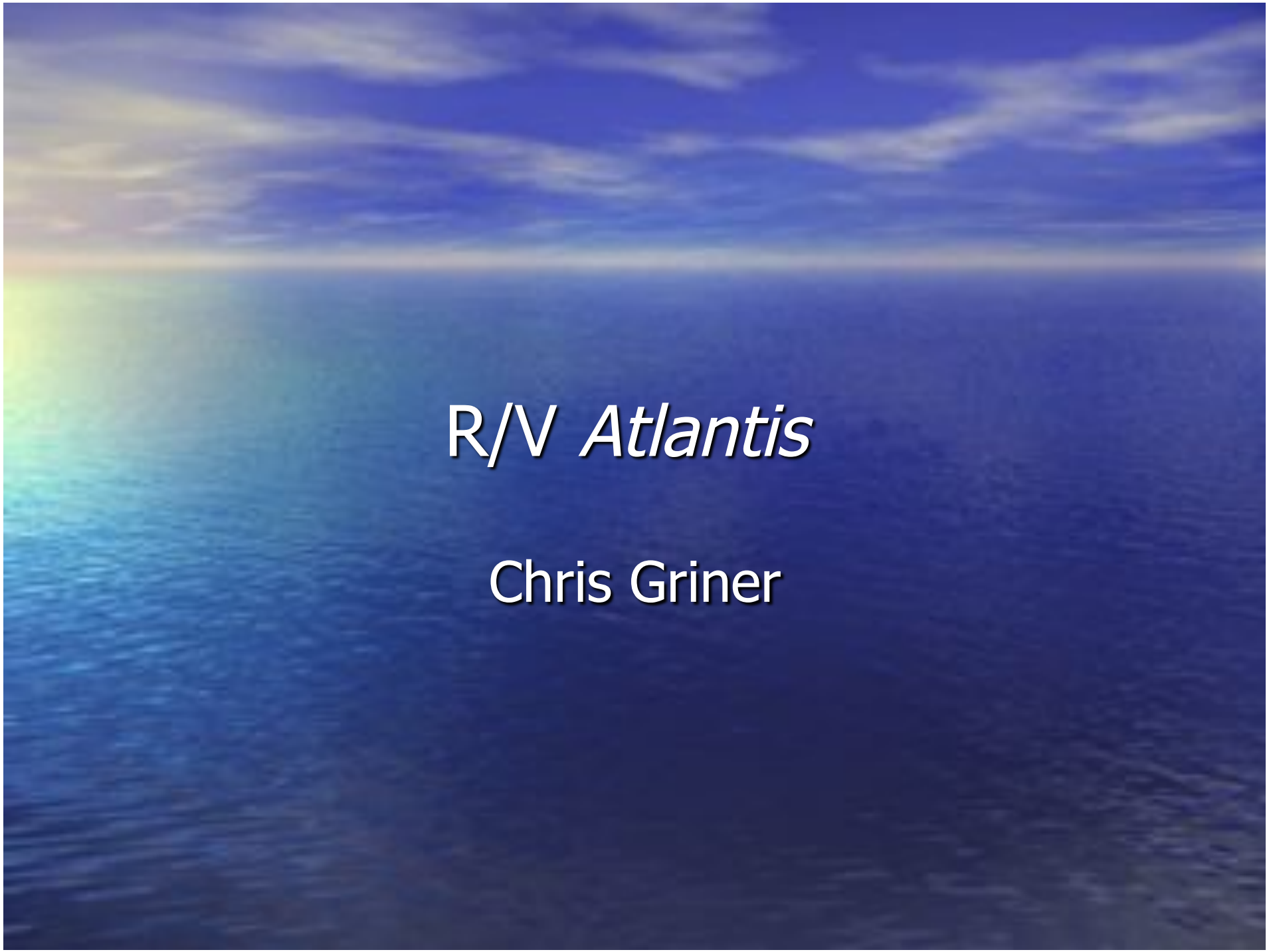
Aug 7th .322 wire breakage. CTD recovered with ROPOS

- SCS installation
- SAMOS contributions
- EM302 Gridding issues resolved (HD)
- WAMOS installation
- 59 Day GEOTRACES
- Increased data demands

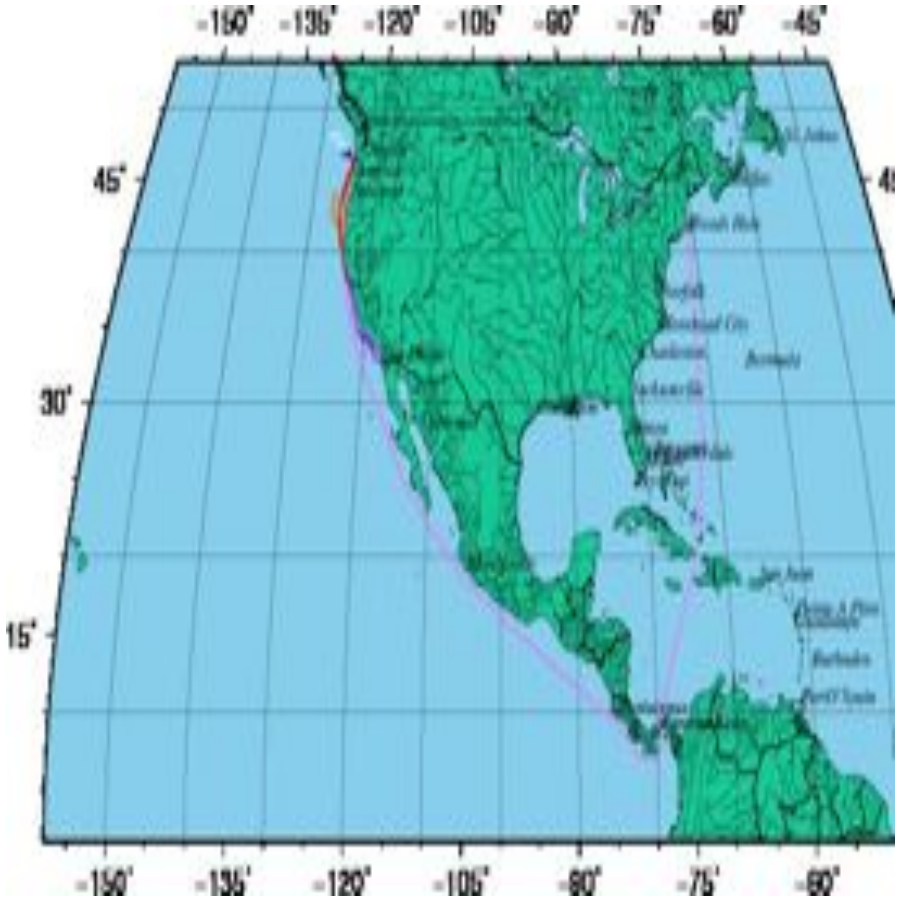
R/V *Atlantic Explorer*

James Caison


R/V Atlantic Explorer


R/V *Atlantis*
Chris Griner

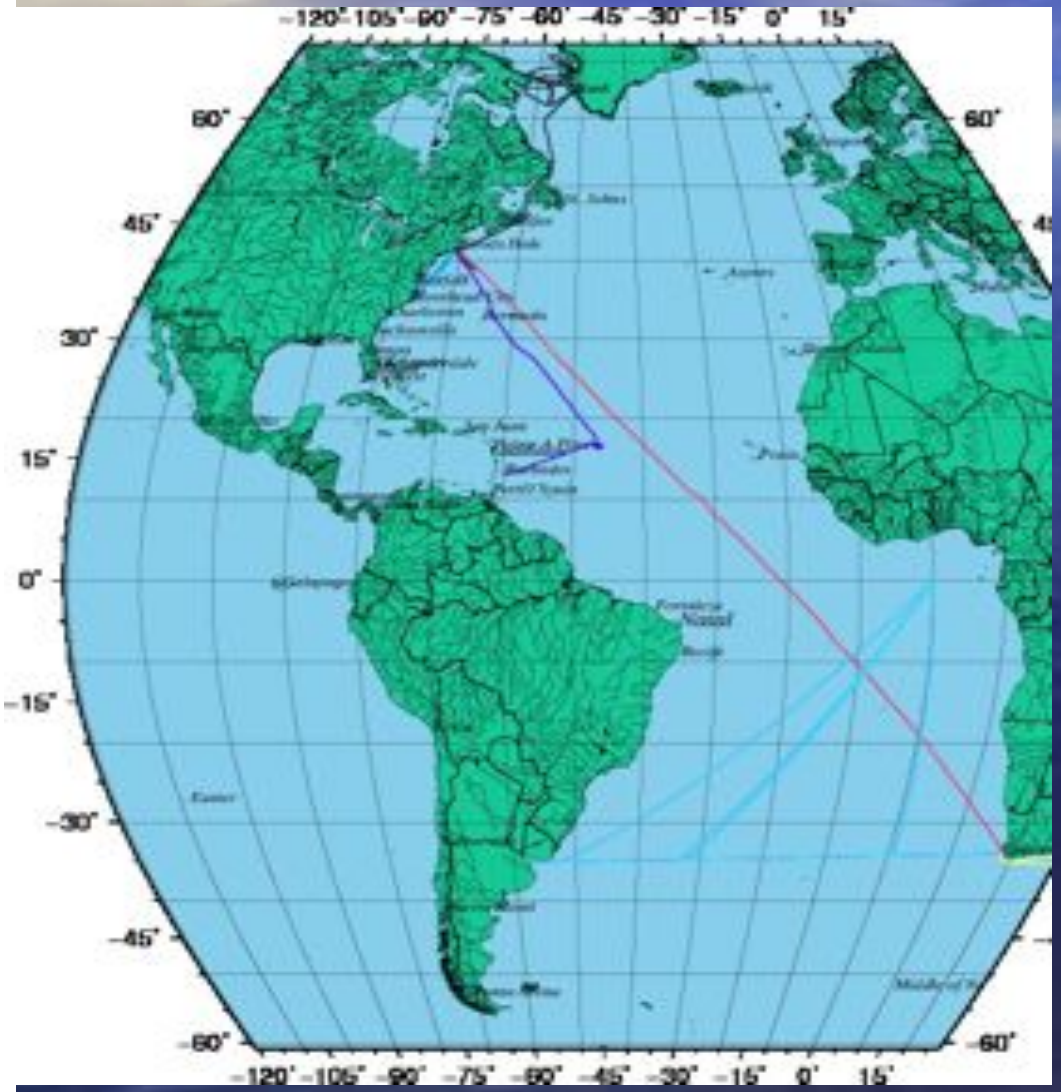
Atlantis 2013



ATLANTIS & ALVIN

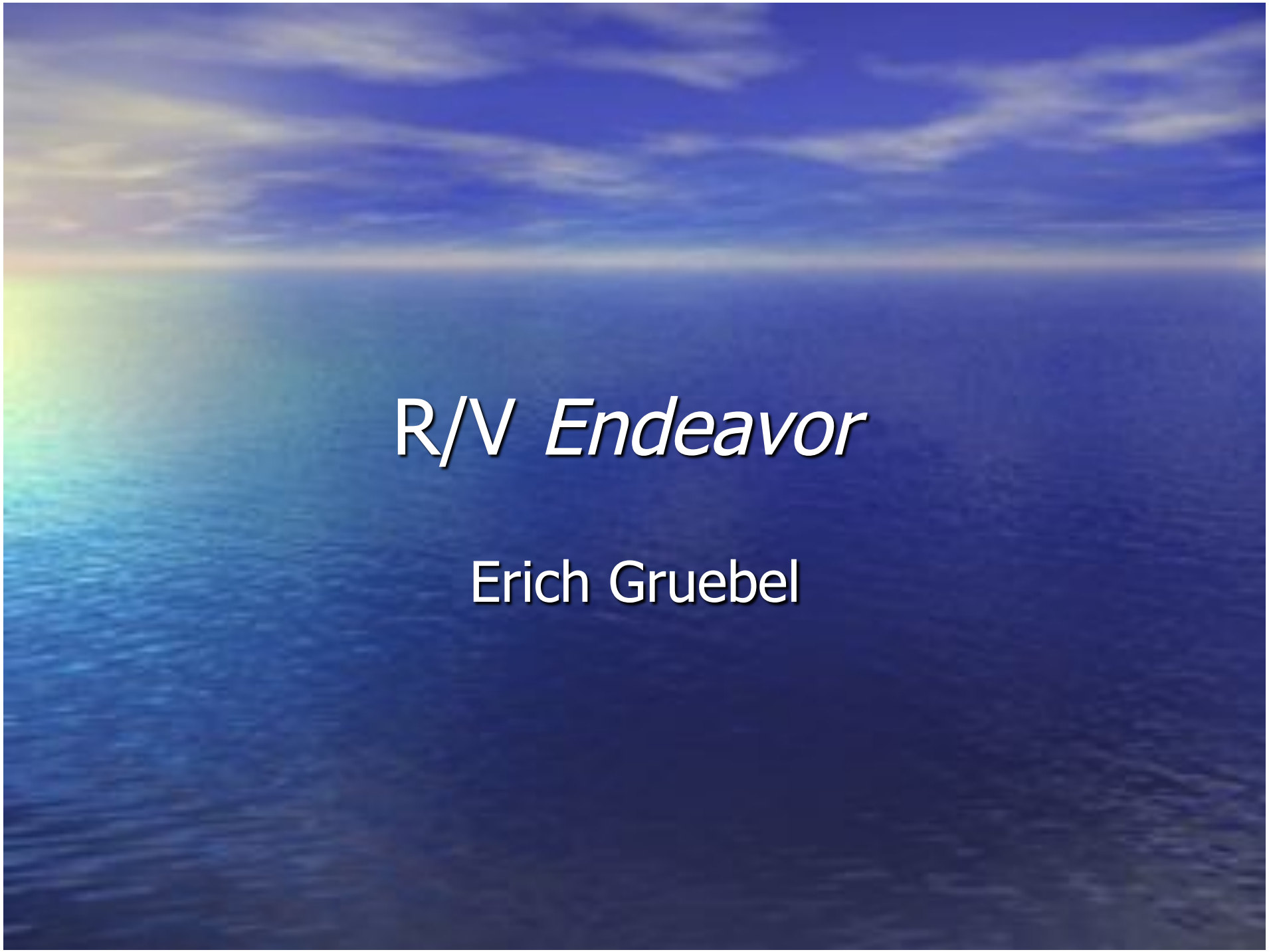

R/V *Knorr*
Chris Griner

Knorr 2013




R/V *Blue Heron*
Mike Hawks

RV BLUE HERON; DULUTH, MINN.


R/V *Endeavor*
Erich Gruebel

R/V Endeavor

University of Rhode Isla

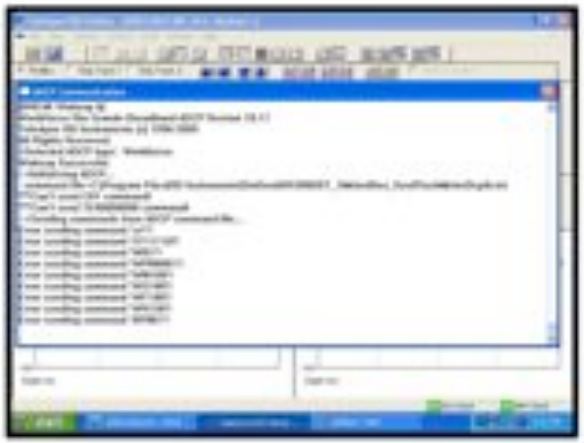
- **March 2011:** Spooled 10km reel of new, factory lubricated Rochester .322 onto primary CTD winch
- **March 2012:** Wire was lubricated per manufacturer instructions with Grignard Stran-Core
- **March 2012 to August 2013:** Wire becomes extremely rusty in a very short period of time
  - Multiple cutbacks of several hundred meters to remove sections of deep rust and scale
  - Endeavor stops using primary CTD winch due to condition of the wire
- **October 2013:** Wire miserably fails e-kink test performed by Endeavor technicians during re-termination
  - Sample sent to WHOI for break testing
  - Sample breaks at ~2900 lbs!

R/V *Hugh R. Sharp*

Slide provided by Tim Deering

R/V HUGH R. Sharp

ADCP 2013 Cable Issues



One of the issues we faced this year was with the ADCP cables to ADCP top hat connection. Our group experienced a set of leaky ADCP cables. We worked very closely with RD Instruments at Teledyne, to try and find the reason. After 3 different cables, we were operational again, but did not have a specific cause.


R/V *Kilo Moana*
Trevor Young

Kilo Moana
Profiler Mooring Recovery

R/V Robert Gordon Sproul
R/V *New Horizon*
R/V *Melville*
R/V Roger Revelle

Aaron Davis

Major Challenges in 2013: Keeping Operational With Few Cruises

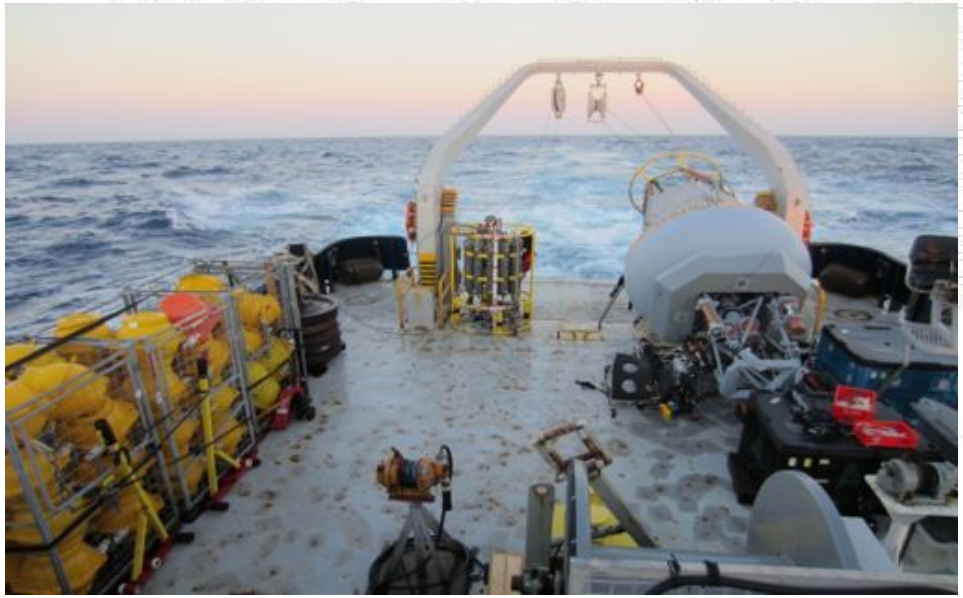
R/V Robert Gordon Sproul

-Shared crew with other vessels

-Tested permanently installed equipment on a regular basis

-Had scientists use a vessel they don't normally use for their cruises

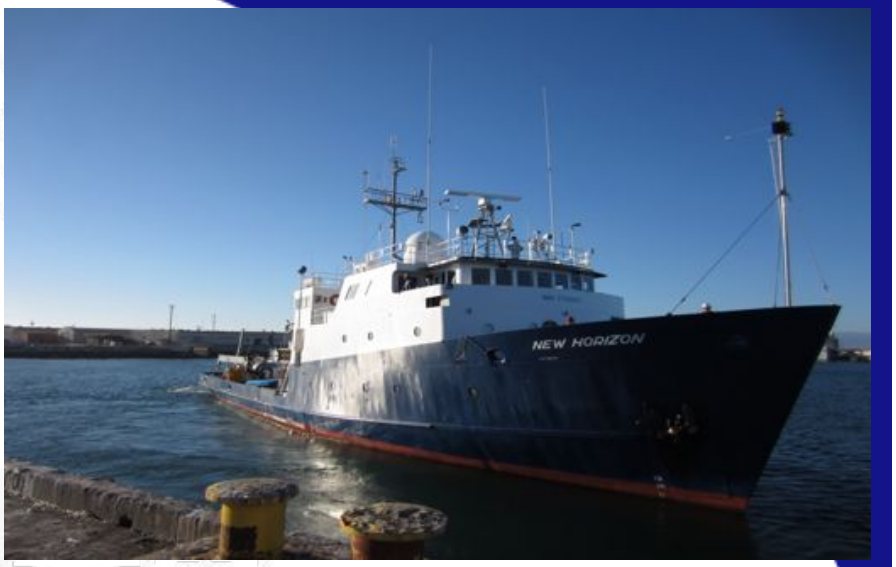
-Stayed prepared for last minute scheduling additions and changes

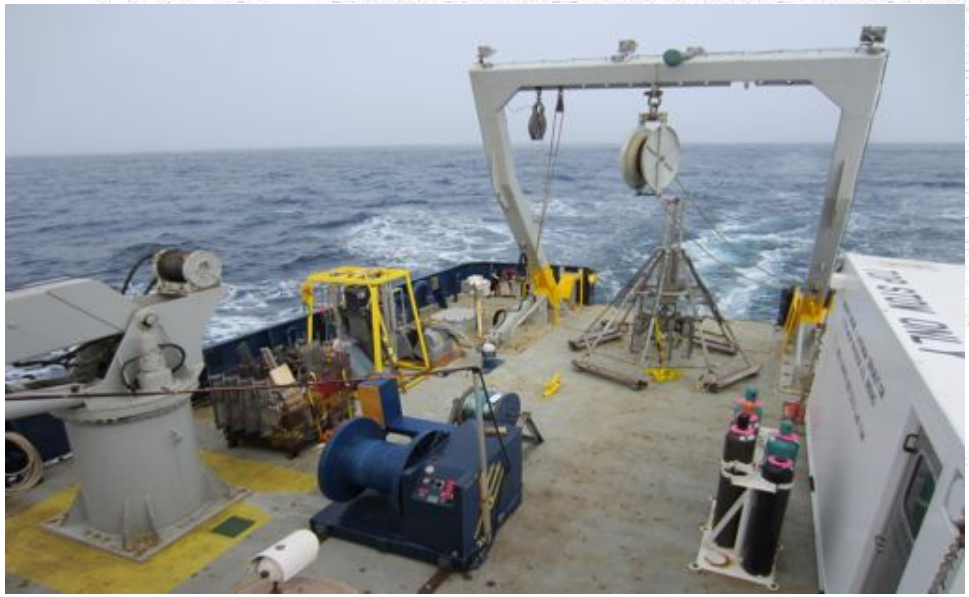


SCRIPPS INSTITUTION OF OCEANOGRAPHY
GLOBAL DISCOVERIES FOR TOMORROW'S WORLD

Major Challenges in 2013: Scientist's Equipment Stuck in US Customs Threatens to Cancel International Cruise

R/V New Horizon





-Shipping agents unable to free shipment in a timely manner due to improper paperwork being filed.

-We reached out to the local scientific community who helped save the cruise by donating supplies and equipment.

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GLOBAL DISCOVERIES FOR TOMORROW'S WORLD

Major Challenges in 2013: CLIVAR CTD Data Quality Issues

R/V Melville

-Standard troubleshooting diagnostics did not clear modulo errors during casts.

-CTD, .322, Seabird software tested and functioned as expected.

-Poor grounding of the CTD winch (DESH 6) was found to be the culprit.

Built-up paint and corrosion on the winch pedestal were to blame for the inadequate ground.

Grounding straps were welded from motor casing to pedestal and from pedestal to deck. This eliminated the electrical noise.

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GLOBAL DISCOVERIES FOR TOMORROW'S WORLD

R/V Roger Revelle

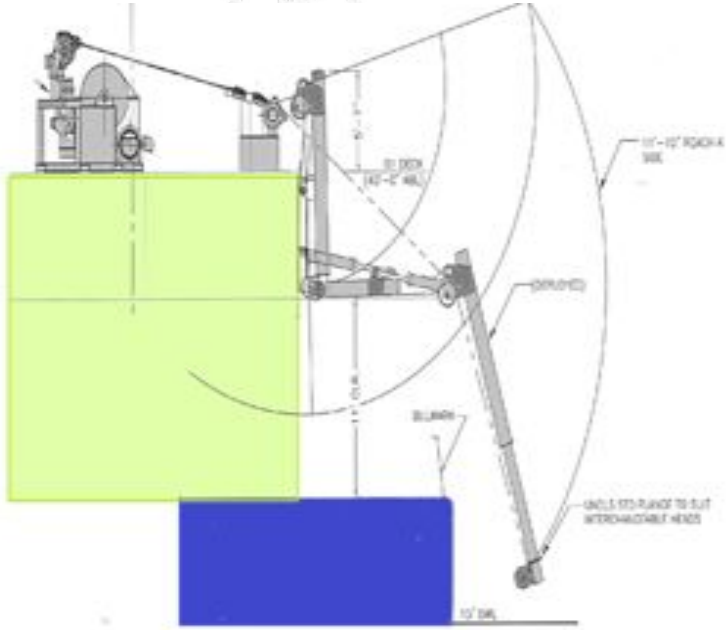
Major Challenges In 2013:

-EM-122 Rx Array Failure and Repair




-Installation and Operation of CAST 6 CTD Handling System (photo on the right)

-MET System Crippled by Lightning Strike



SCRIPPS INSTITUTION OF OCEANOGRAPHY
GLOBAL DISCOVERIES FOR TOMORROW'S WORLD


R/V *Pelican*
John Ahern

Flooded ADCP w/Li Batts

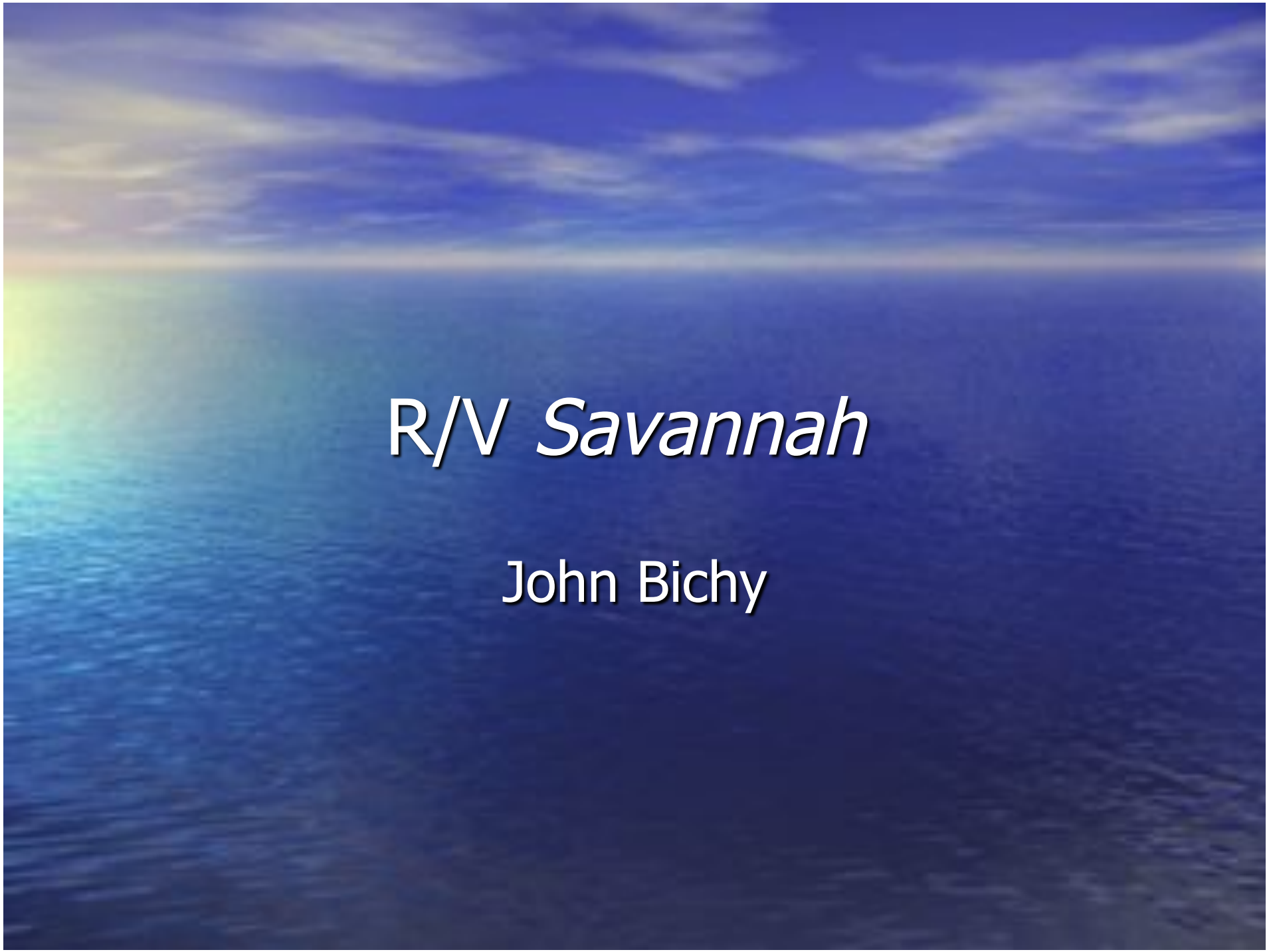
Lessons Learned

- Briefing Works
- Training Works
- Extinguishers are good


R/V *Point Sur*
Stian Alesandrini

A Big Trip For a Little Ship

Taking a Regional Vessel to Antarctica


R/V *Savannah*
John Bichy

R/V Savannah
John Bichy
RVTEC 2013

Frame Weight Tests

R/V *Oceanus*

Erik Arneson

Oregon State University
Marine Technician Group

2013
Year in Review

168 Sea Days

- Oregon
- CA/WA/Canada
- 107 NSF
- 60 ONR
- 1 OOI

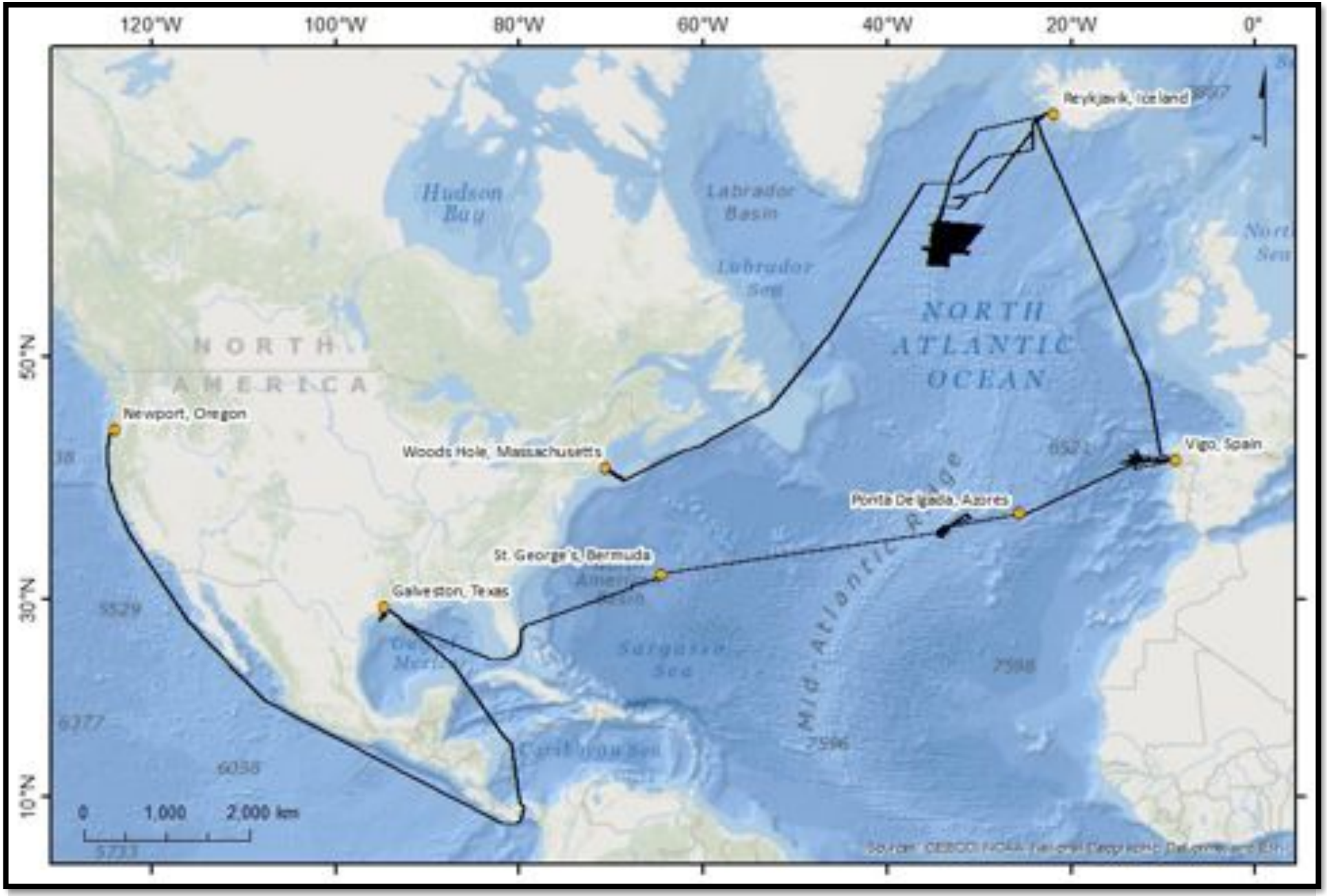
Highlights

- Extreme weather
- Echosounder SCSI
- Single-board computers

Difficulties

- ADCP WH300
- Echosounder SCSI
- OS 75 spare logistics


R/V *Langseth*
Robert Steinhaus



RV Langseth 2013

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

USCG Vessel: Healy

Sarah Kaye & David O'Gorman


Sure, we can make this work
(c) 2013 Shannon Riley

STARC 2013

USCG ICEBREAKERS
UNITED STATES COAST GUARD SCIENCE OPERATIONS

94 Sea Days
3 cruises

Highlights:
- New Science
  - Seawater System
- New Lab

Difficulties:
- New Lab

Nathaniel B. Palmer
Laurence M. Gould

Skip Owen & Scott Walker

Wire Logging on USAP Research Vessels

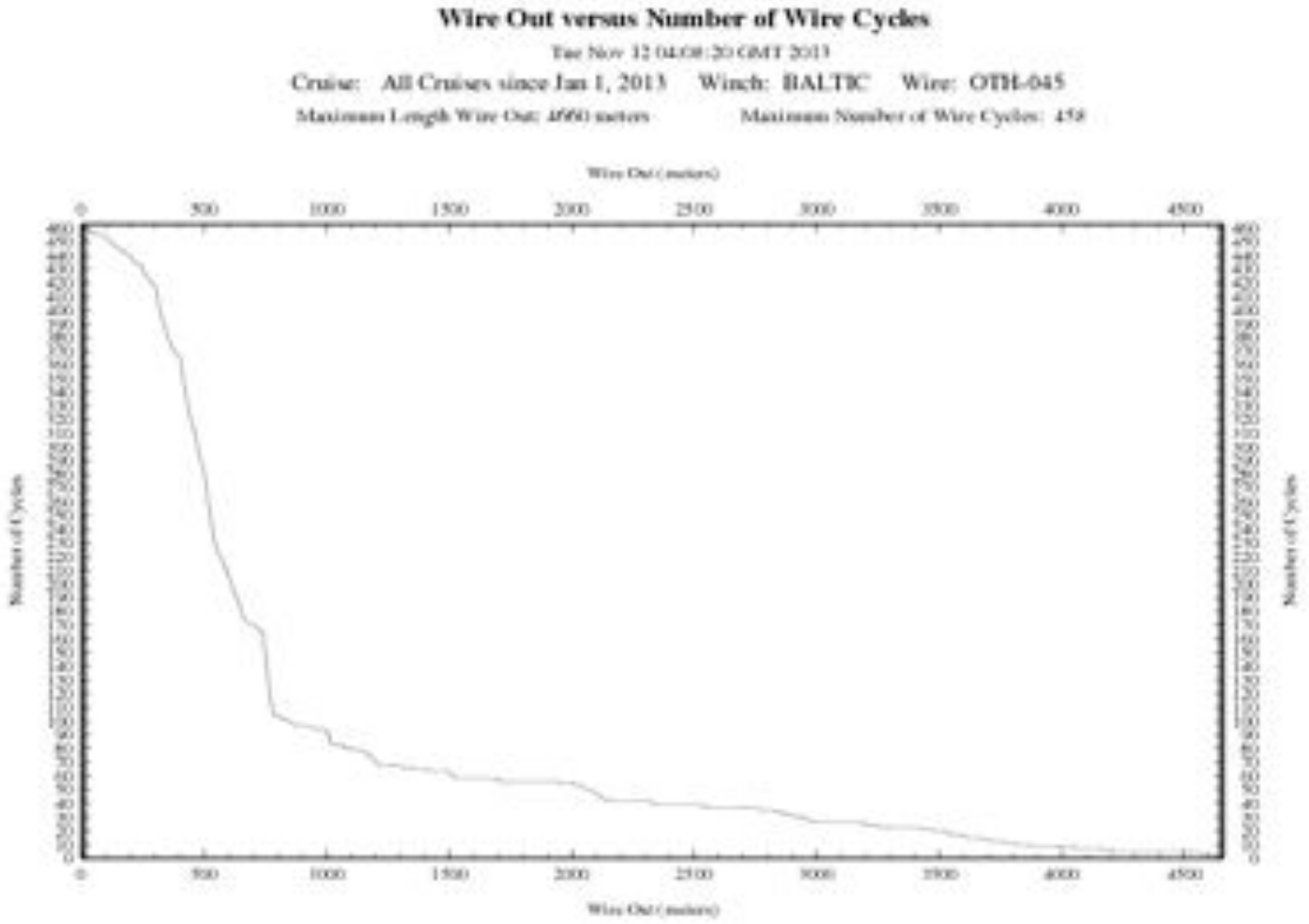
All data is written to the network

Copied to portable hard drive that travels with the wire for annual testing

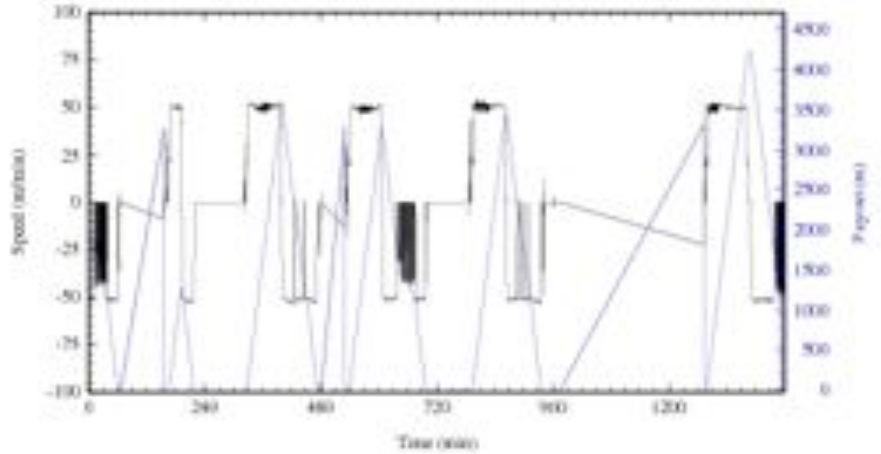
Custom process logs cycles and tensions experienced

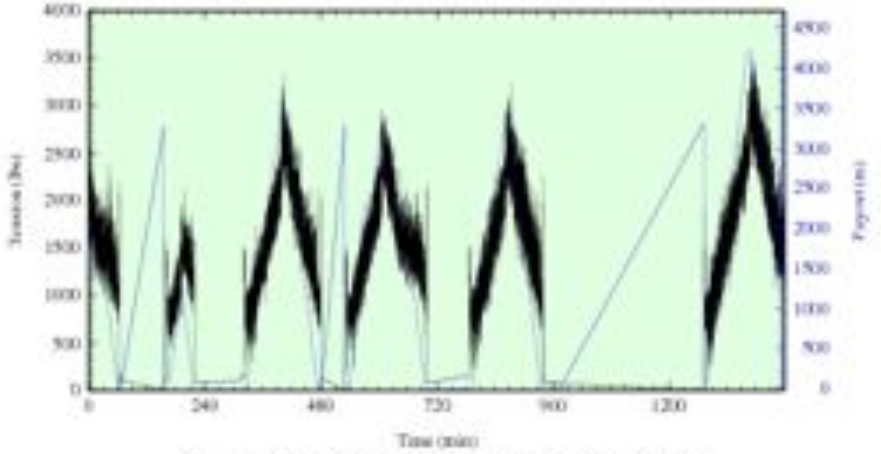
'Map' of the wire on the drum provides ready review of wire state

Logging Wire cycles - report



NBP1310A /data/current_cruise/process/Winch/BalticW.d311



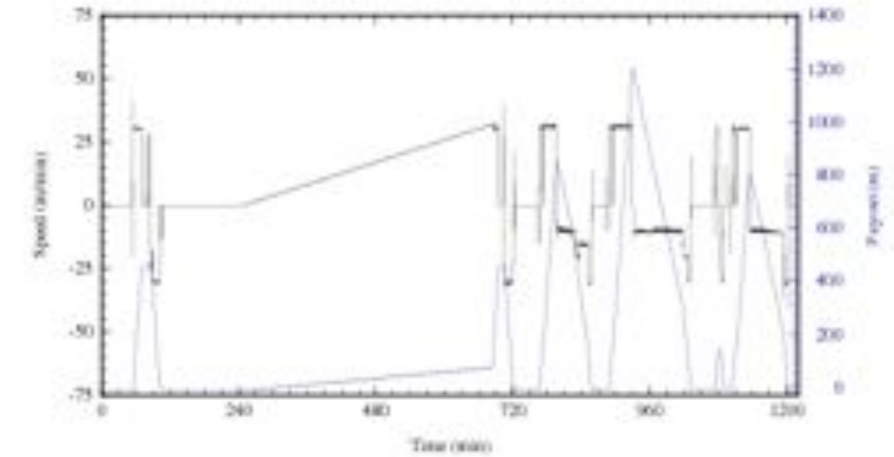


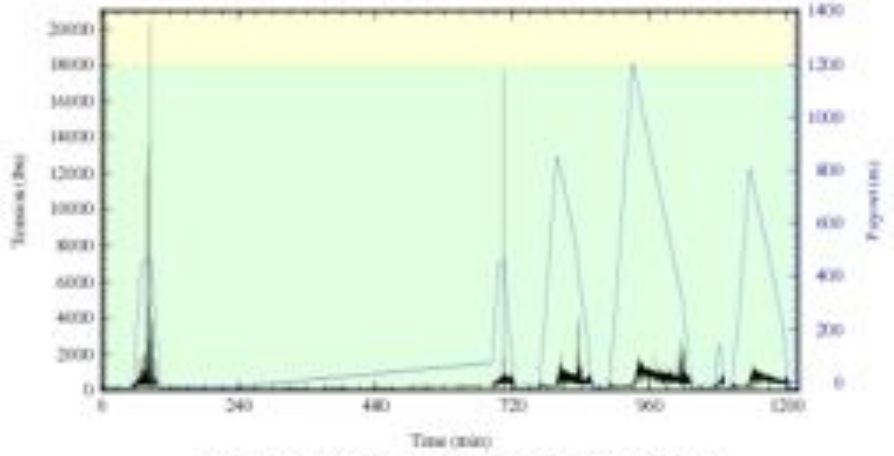
Cruise: NBP1310A Winch: BWNC (OTH-045)

Event: /data/current_cruise/process/Winch/BalticW.d311

Start: 13+311:00:00:01.036	End: 13+311:23:59:59.999	Total: 1439.0 minutes
Max Payout: 004218.2 m	13+311:22:49:29.097	1369.5 minutes
Max Tension: 00003512 lbs	13+311:22:51:03.561	1371.1 minutes
Max Speed: 53.9 m/min		

NBP1303 /data/current_cruise/process/Winch/StbdT.d123





Cruise: NBP1303 Winch: TWNCs (OTH-022)

Event: /data/current_cruise/process/Winch/StbdT.d123

Start: 13+123:00:00:01.035	End: 13+123:20:20:00.807	Total: 1220.0 minutes
Max Payout: 001200.2 m	13+123:15:29:25.899	929.4 minutes
Max Tension: 00020445 lbs.	13+123:01:24:16.325	84.3 minutes

Max Speed: 41.4 m/min

SMR 2013 Aug 07 18:03:40

NBP Winch Log Analysis: BALTICtension OTH-045
Today's date: Tue Nov 12 08:12:33 GMT 2013
Data start date January 1, 2013

Maximum wire pull information:

This set of numbers documents the Maximum Wire Out for a tension in the yellow or red zone.

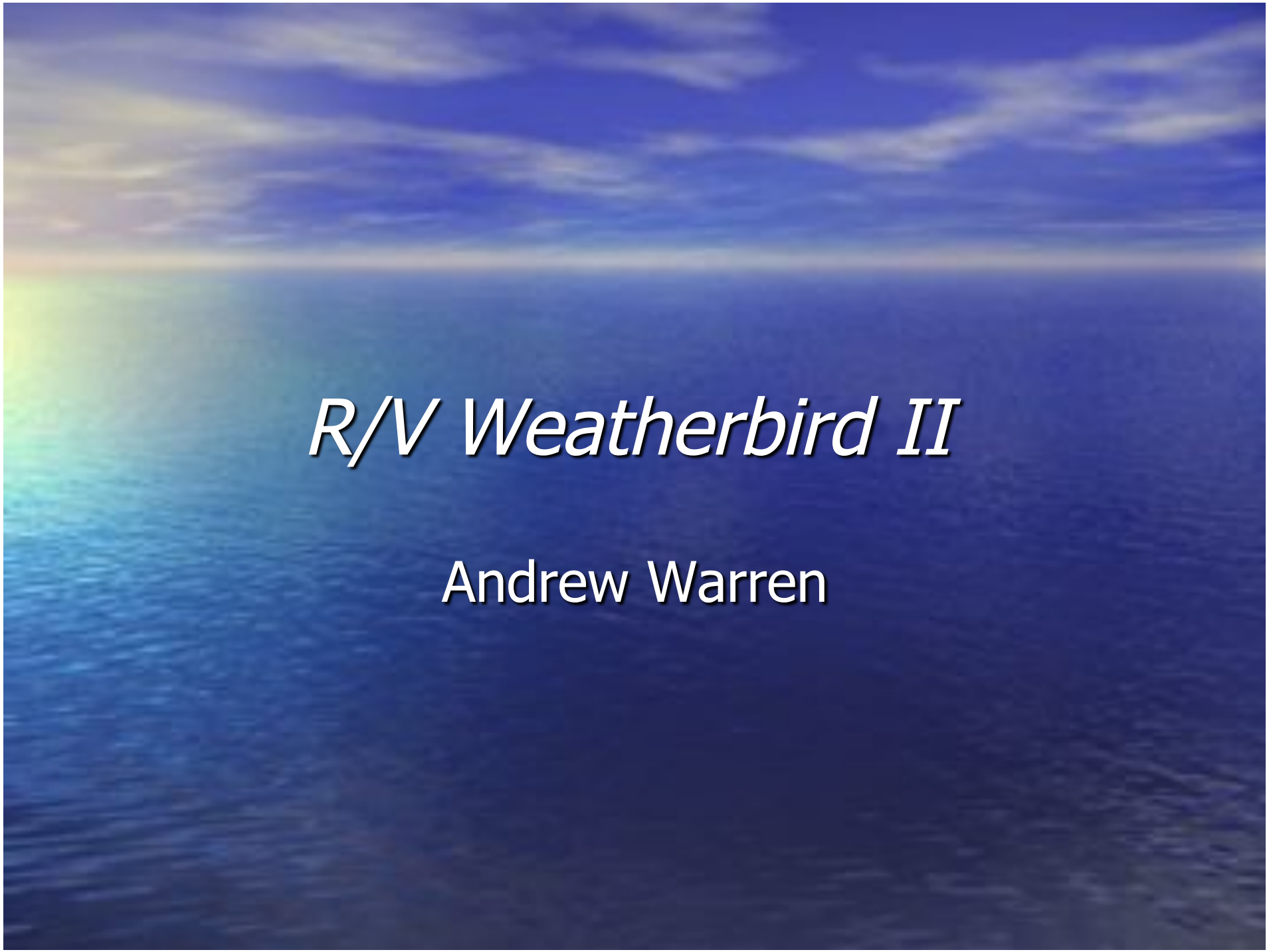
Maximum Wire Out in the Yellow Zone: 4624.20 (m)
Tension at Maximum Wire Out in the Yellow Zone: 4104.00 lbs
Time: 13+084:01:54:45.041

This set of numbers documents the Maximum Tension for a wire out in the yellow or red zone.

Maximum Tension in yellow zone: 4867.00 lbs
Wire Out: -8.00 (m)
Time: 13+018:06:49:21.719

Tue Nov 12 08:12:33 GMT 2013 BWNC Yellow Zone Maximum Wire Out: 4624.20
Tension: 4104.00 Date: 13+084:01:54:45.041


R/V Falkor

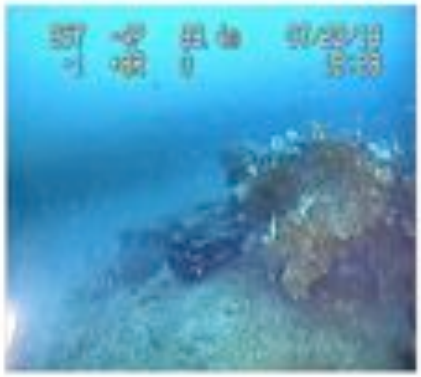

R/V Weatherbird II
Andrew Warren

The Florida Institute of Oceanography

Search and Recovery of Gear I Satellite Service I CrAzY Scientists I Spaghetti








NOAA Vessels

Greg Speer

VFDs

Variable Frequency Drives

(a.k.a adjustable-frequency drive, variable-speed drive, AC drive, micro drive or inverter drive)

- **Drive systems to control AC motor speed and torque by varying motor input frequency and voltage.**

- **VFDs are used in applications ranging from small appliances to the largest of mine mill drives and compressors.**
- **Approximately a third of the world's electrical energy is consumed by electric motors in fixed-speed centrifugal pump, fan and compressor applications.**
- **Many Shipboard uses such as water pumps, exhaust fans, compressors, etc.**