UNOLS Research Vessel Technical Enhancement Committee (RVTEC) Meeting November 2016

Icebreaker Session

University of Miami


ADVENTURE OF THE SEAS

UNIVERSITY OF MIAMI

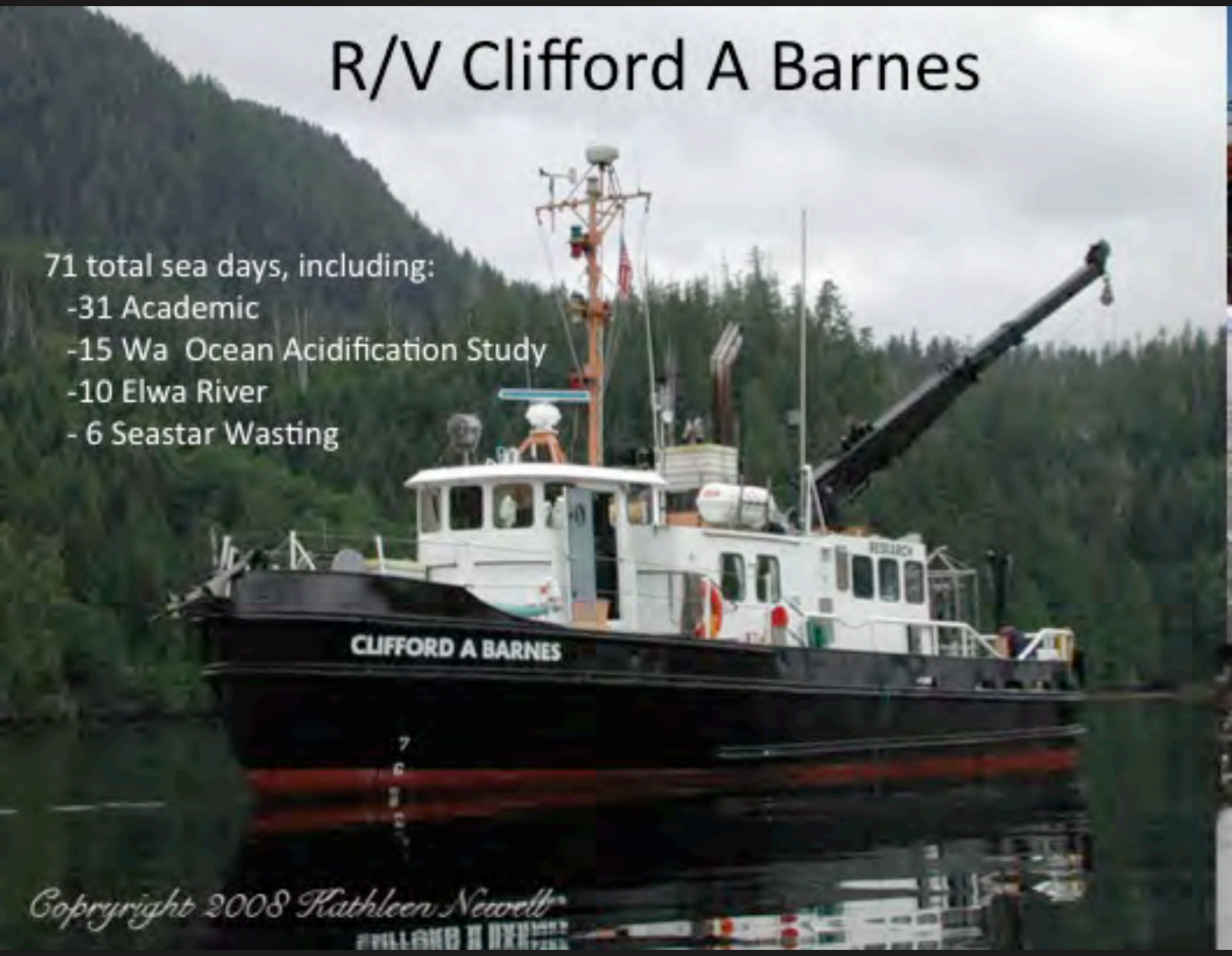
MARINE OPERATIONS

University of Miami / RSMAS
Marine Operations
4600 Rickenbacker Causeway
Miami, FL 33149
(305) 421-4175

1. After 20+ years the techs have moved out of Harbor Branch Oceanographic Institute. All science equipment and operations are now from our RSMAS campus.
2. A 5 year project on a non-UNOLS vessel (Seward Johnson) has come to an end. Most of the scientific equipment has been returned to our RSMAS campus.
3. We continue to inventory all the equipment from #1 & #2.
4. Some of this equipment will be made available to the fleet and coordinated through Jim Holik.
5. Rich Findley and Aubri Vail are no longer with UM, Rich Findley continues to respond to RVTec emails/questions.

R/V Clifford A Barnes

71 total sea days, including:
- -31 Academic
- -15 Wa Ocean Acidification Study
- -10 Elwa River
- - 6 Seastar Wasting

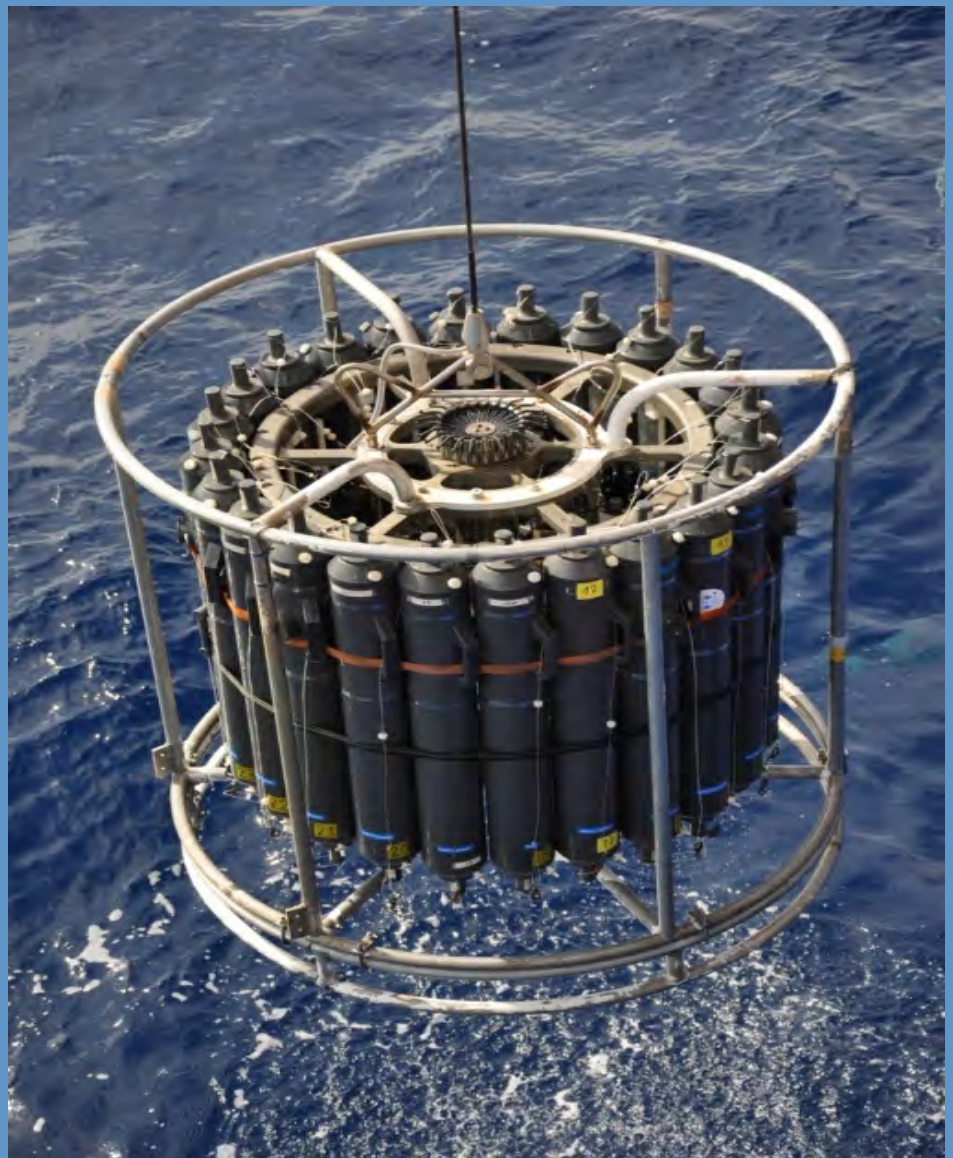


R/V Thomas G Thompson, UW

- 1 January – 25 May: 126 sea days
- 15 June: begin shipyard for Midlife Refit
- 15 August – 25 Oct: dry dock

Mason Schettig
Marine Science Technician
R/V Atlantic Explorer
Bermuda Institute of Ocean Sciences (BIOS)

Technical Issue's and Trouble Shooting



Recent Issues:

- Misclosing Niskin Bottles during CTD operations.

- LCI90 Counter Input Glitch

WHOI

R/V Atlantis

2016

Noteworthy cruises:

- Cruise involving multiple Deep Submergence assets to (successfully) locate and document the El Faro Voyage Data Recorder
- OOI work off the coast of Northwest US
- Early career chief scientist training cruise for Deep Submergence vehicles
- Jumbo piston coring in Discovery Bay, Jamaica
- 5 total Alvin cruises for the year
- Finishing off the year with geology/vent work in the East Pacific

Major challenges:

- Upgrades and reconfigurations of HiSeasNet equipment to accommodate 2 major telepresence cruises in cooperation with the Inner Space Center
- Early Career scientist cruise, developing ways to communicate priorities in the duties of a chief scientist (trying to let them know what the ship side personnel need from them)

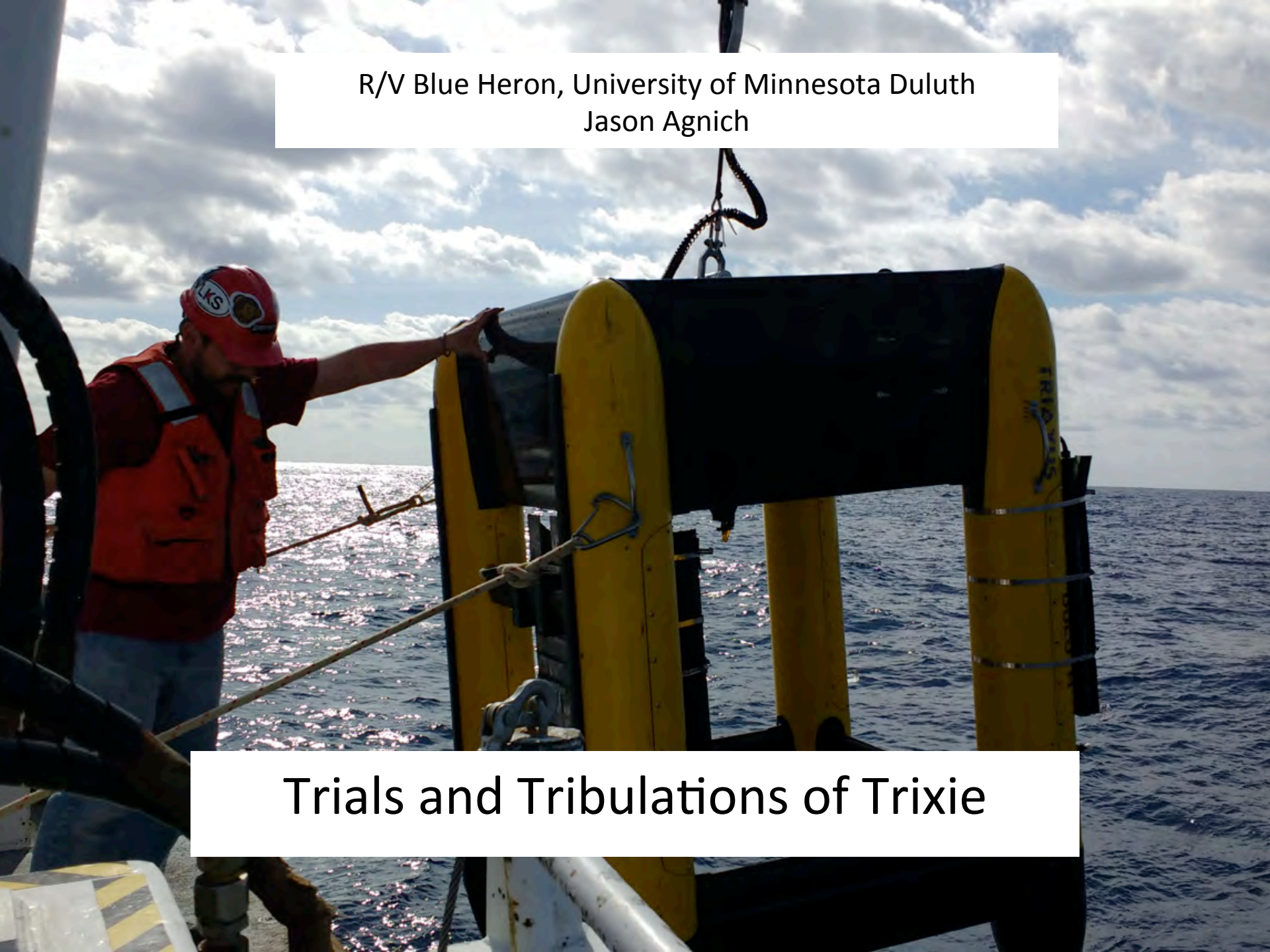
WHOI R/V Neil Armstrong 2016

Cruises:

- Post shipyard sea acceptance trials including sonar calibration and AUTEC acoustic range testing
- Six science verification cruises proving out the ship's functionality
- Five Pioneer OOI mooring service legs
- Two cruises in sub-arctic Atlantic ocean
- Closing the year out with warranty dry-dock shipyard period

Major Challenges:

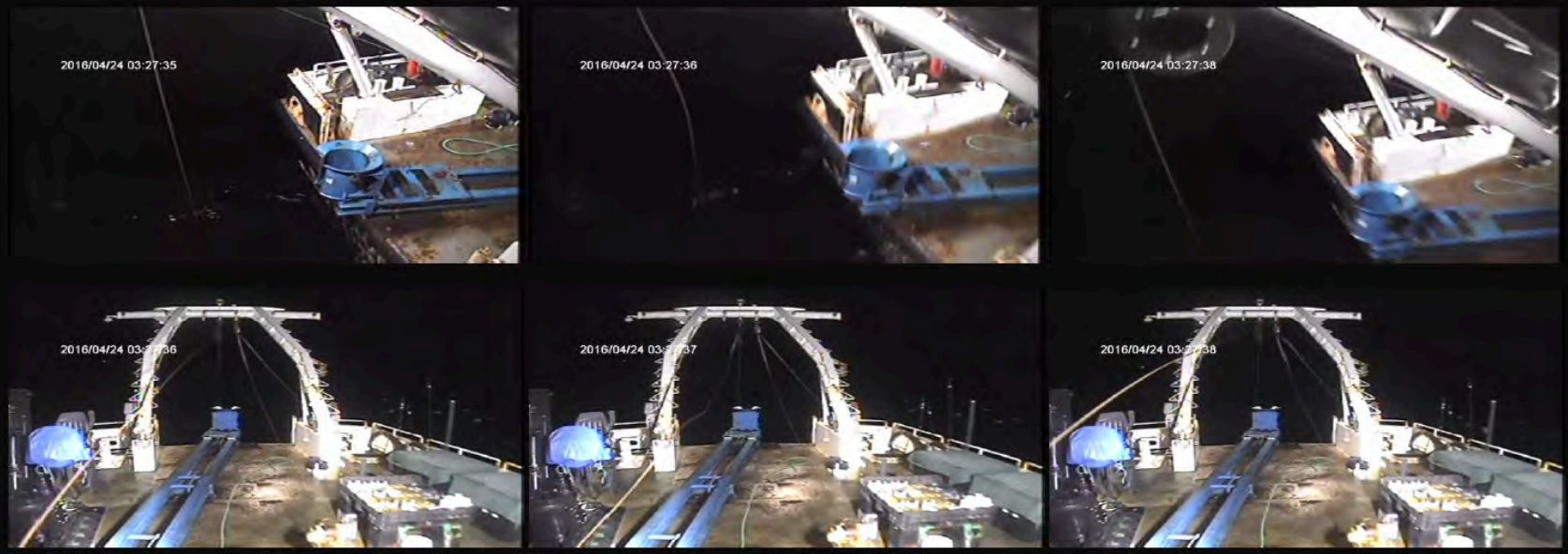
- Installation of all scientific equipment during demanding phase III shipyard period
- Video matrix system planning and installation
- Initial NSF inspections
- Two new shipboard science technicians
- HiSeasNet initial installation

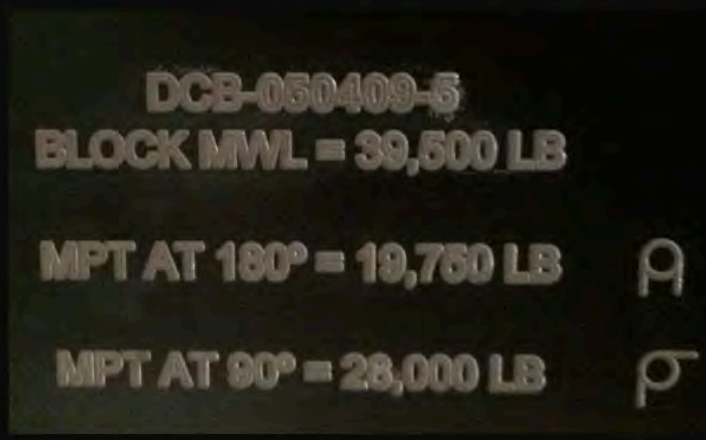


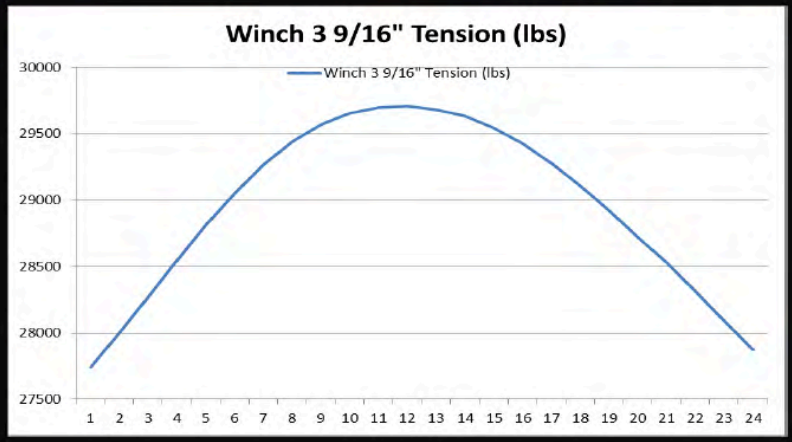
R/V Blue Heron, University of Minnesota Duluth
Jason Agnich

Trials and Tribulations of Trixie

29,706 lbs of tension on 9/16” trawl wire

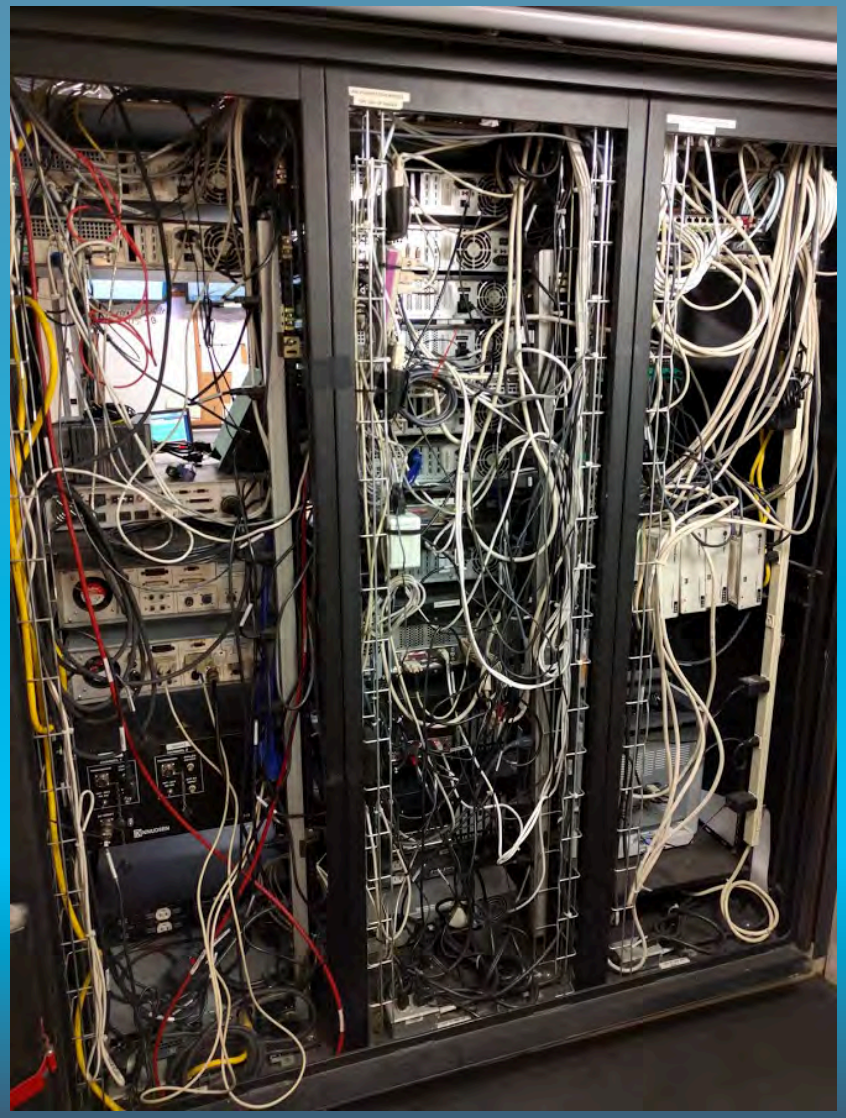






UNIVERSITY OF DELAWARE

R/V Hugh R Sharp



Find that cable.....

Challenges of troubleshooting over email with a new tech.

MOVING THE UNIVERSITY OF HAWAII MARINE CENTER

- State of the art (in it's day)
- Many of the facilities needed upgrading
- Irregular surfaces made MOB/DEMOBs dificult
- Decaying infrastructure

THE NEW UH MARINE CENTER

- All facilities consolidated under single roof
- New Structures and Level ground
- Closer to many support businesses
- Phase II construction next year
  - New warehouse floors including winch re-spooling facility
  - Additional fencing and roll up doors
  - Expanded roof line

THE CHALLENGES

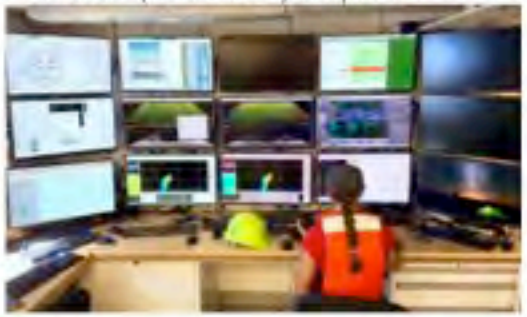
- Limited time (60 days) and uncertain start date
- Active construction on site during move in
- More than 150 shipping containers to process
- Extensive library of more than 1000 cores and 170 tons of geologic samples (in 5 gallon pails)
- 35 years worth of skeletons
- Minimal man power (averaging 4 people)
- Necessity for no disruption in ship operations

R/V Roger Revelle 2016

- Shipyard (Keelung Taiwan)
- Rebuilding of 36 place Rosette CTD at sea.
- .322 wire z-kink
- Hiseasnet Radome replacement.

R/V Sally Ride: America's Newest Research Vessel!

Under construction since 2012. Transferred to SIO operation July 1. Arrived in San Diego Aug 26. Outfitting of laboratory spaces, ship and scientific systems ongoing. Science verification cruises thru Feb 2017. 1st official cruise (CalCOFI) departs Nov 6.



Outreach Projects:

- **Ship's blog**

scripps.ucsd.edu/expeditions/sallyride

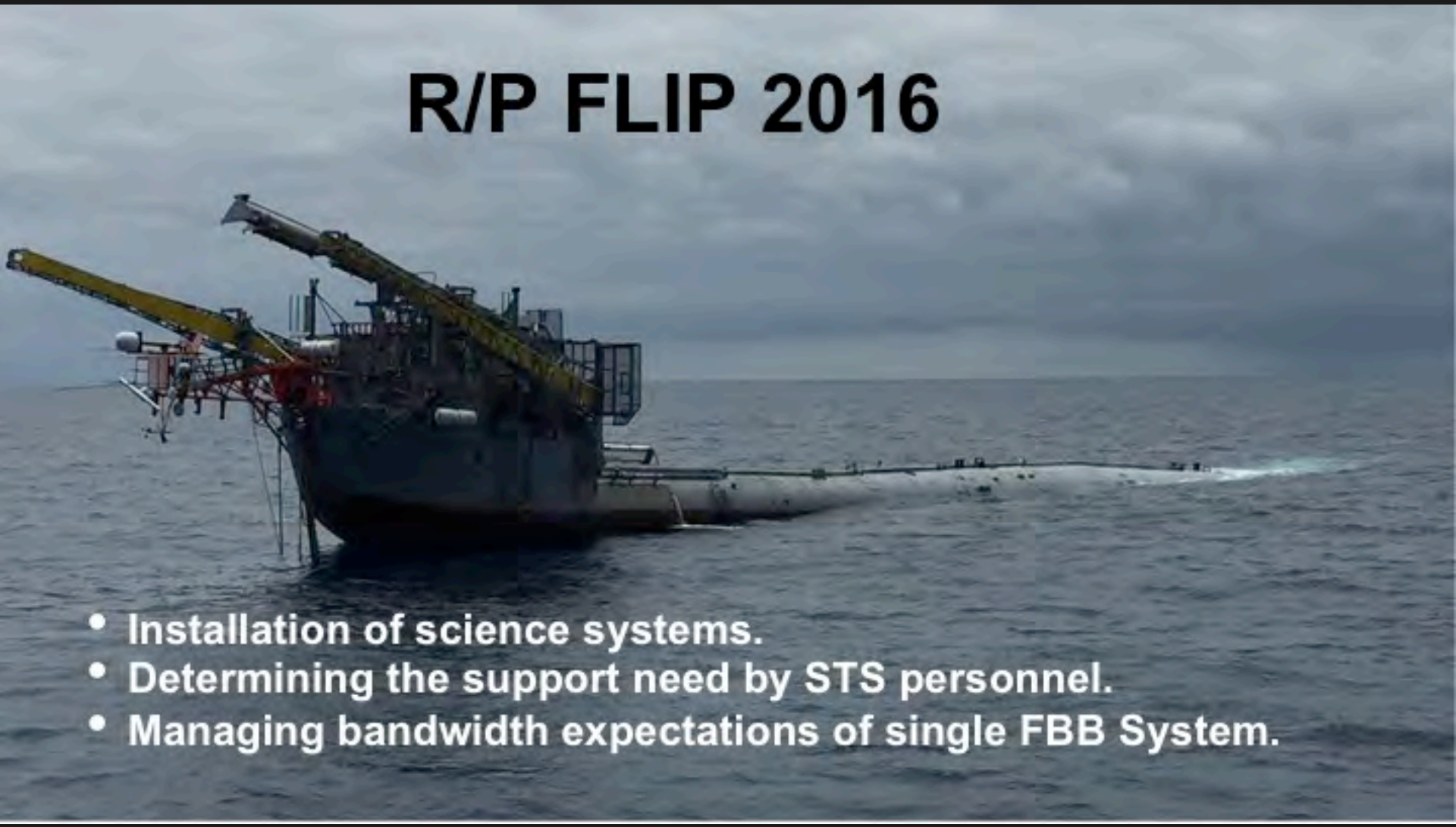
- **Social media**

@RVSallyRide
@SaltySallyRide

- SIO homecoming party
- Public tours in San Francisco & San Diego


R/V Robert Gordon Sproul 2016
ROBERT GORDON SPROUL
ROBERT GORDON SPROUL
SAN DIEGO, CA
• FLIP Mooring Operations
• Managing bandwidth expectations of single FBB system.

R/P FLIP 2016



- Installation of science systems.
- Determining the support need by STS personnel.
- Managing bandwidth expectations of single FBB System.

Introduction

Test new methods to remotely detect optical layers using:

- ship-borne polarimetric LIDARS
- multi-wavelength LIDARS
- Calipso space-borne LIDAR

The use of dyes to quantify the role –

-Langmuir circulation sub-mesoscale features
-transport of particles in

Acknowledgements

Derik Gray & Derek Burrage, Remote Sensing Division, Naval Research Lab, Stennis Space Center, MS

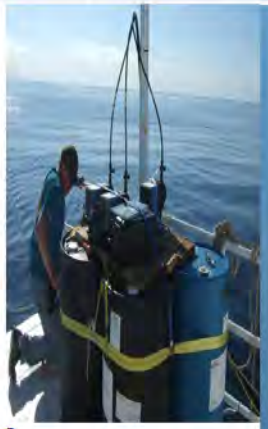
Methods

Converting Degrees to Degrees Radian (Octave Open Source)

Degrees
Radian=(Degrees*Pi)/180

Source (SCS)	Parameter	Units
Trimble (SPS 351)	COG	Degrees Radian
Trimble (SPS 351)	SOG	Knots
RM Young Wind Bird	Relative Wind Direction (Cw)	Degrees Radian
RM Young Wind Bird	Relative Wind Speed (Vw)	Knots

```
% Compute Sea speed%
Given ground velocity%
and
current velocity
cg=input('COG(deg):  ');
vg=input('SOG(knt):  ');
cw=input('CDR(deg):  ');
vw=input('CSP(knt):  ');
vgE=vg*sin(deg2rad(cg));
vgN=vg*cos(deg2rad(cg));
vwE=vw*sin(deg2rad(cw));
vwN=vw*cos(deg2rad(cw));
vsE=vgE-vwE;
vsN=vgN-vwN;
vs=sqrt(vsE*vsE+vsN*vsN);
%display(['sea spd=',num2str(vs)])
printf('sea spd= %7.2f \n',vs)
```



Results

Overall, we estimated that we had a 70% success rate

Discussion/Improvements

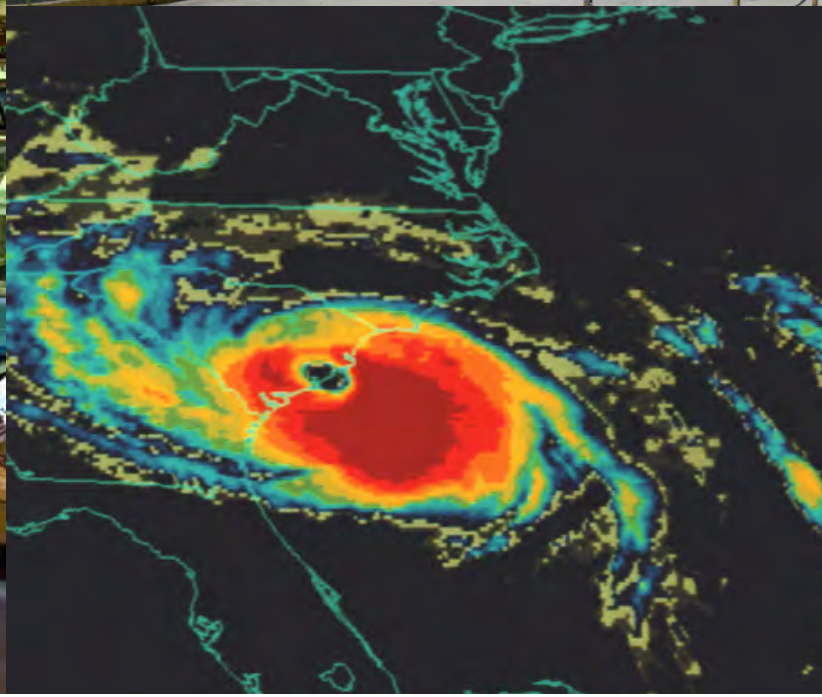
Account for the logarithmic sublayer and surface roughness

Real time wheel house visual display

Hurricane Matthew Recovery

Skidaway Institute of Oceanography

NATIONAL SCIENCE FOUNDATION

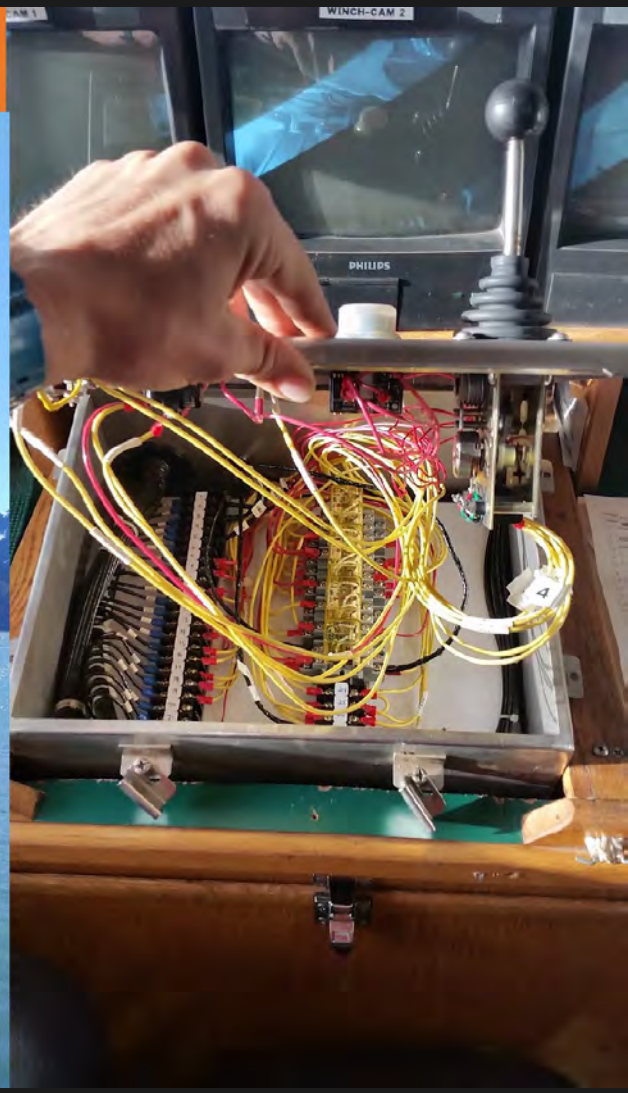


UNOLS

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

OSU Oregon State University

UNOLS
UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM



8km (vs) 12.6km Guideline Changes

- 1st deployment – 24hrs
- Retrieval – 4hrs
- Max STW - ~4.8kts
- Max C/tension - ~5k#
- Avg. SOG - ~4.5kts

- 1st deployment – 36hrs
- Retrieval – 6hrs
- Max STW - ~4.3kts
- Max C/Tension - ~7k#
- Avg. SOG - ~4kts

- Min water depth - 25M

- Min water depth - 25M

RVTEC Icebreaker 2016
UAF R/V SIKULIAQ

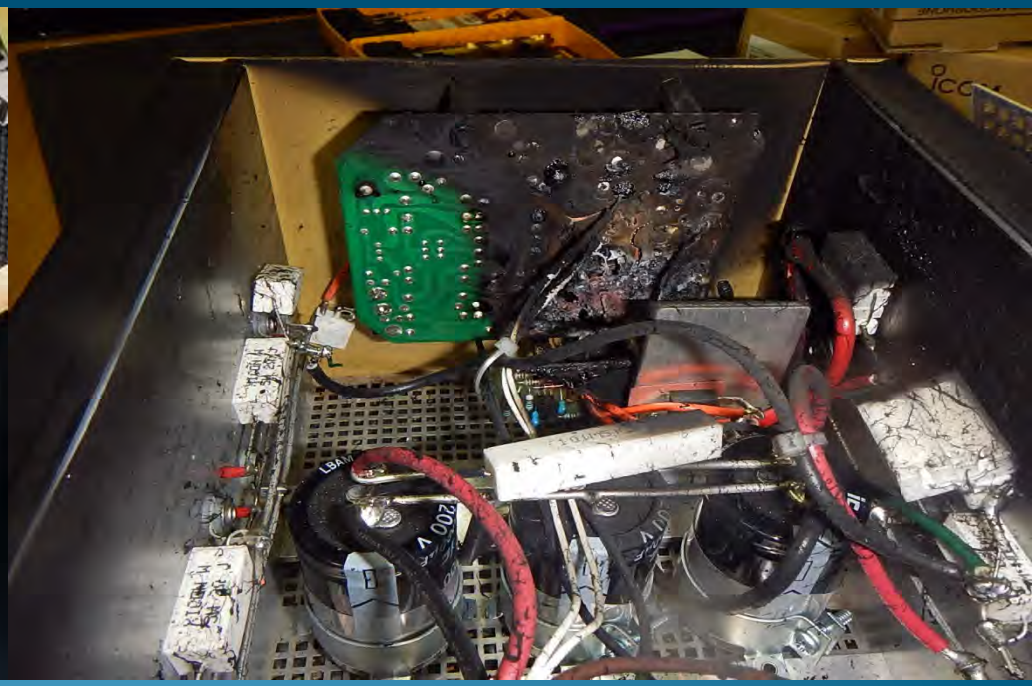
My stuff does not work.

Who Is to blame?

- Palo Alto?
- Legacy Operating Systems?
- Marine Technicians?
- Cyberoam?

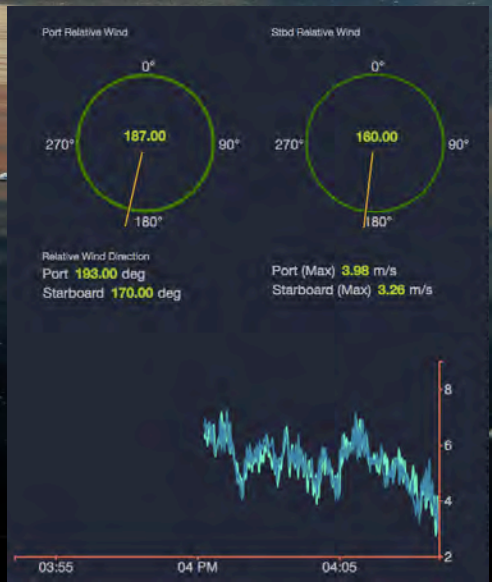

UNOLS Technician Pool
MARCUS G. LANGSETH
Atlantic Explorer
BATS
NYC
OBS
USGS
UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM
UNOLS
OOI
Tina Thomas
TinaT.MarineTech@gmail.com

NOAA



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations

USAP Research Vessels



SOI Challenges 2016

- We Don't Need No Stinkin' Generators
- Vietnamese Permit Fake Out
- ROV SuBastian
  - Completion
  - Testing
  - Staffing
- MT Staffing

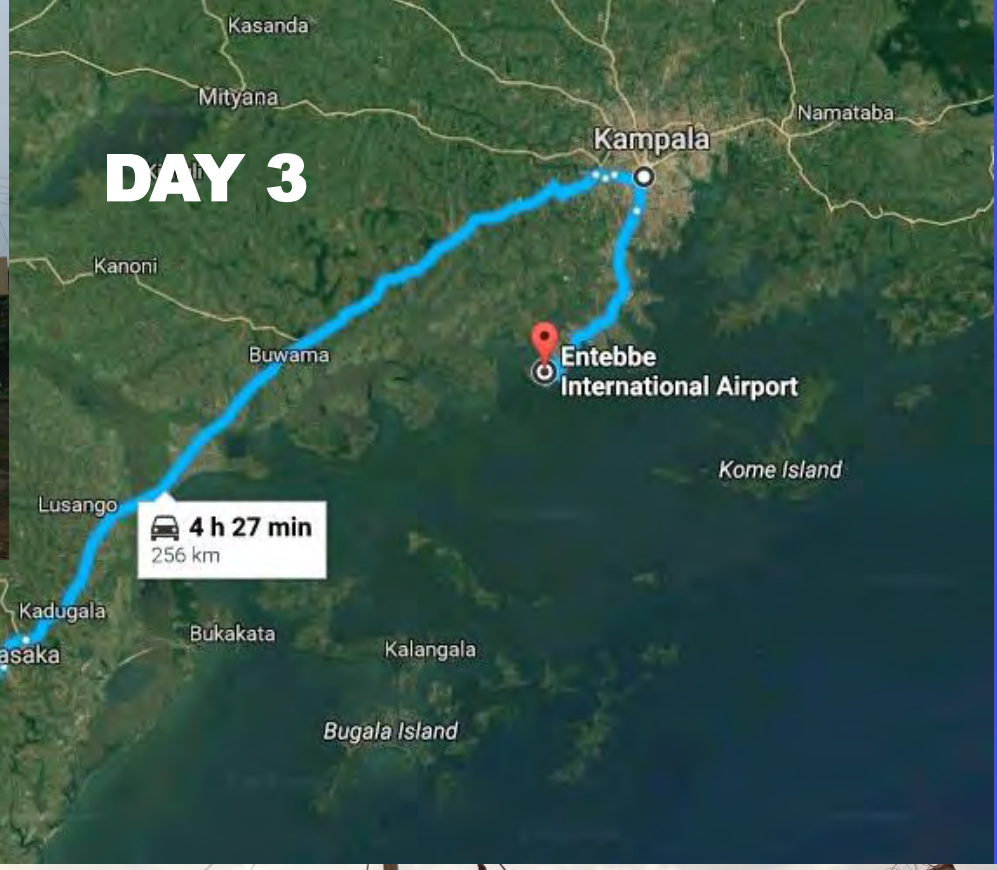
Stony Brook University
School *of* Marine and Atmospheric Sciences

HyCRISTAL Project
Ferry Instrument Install
"Half the Fun is Getting There!"

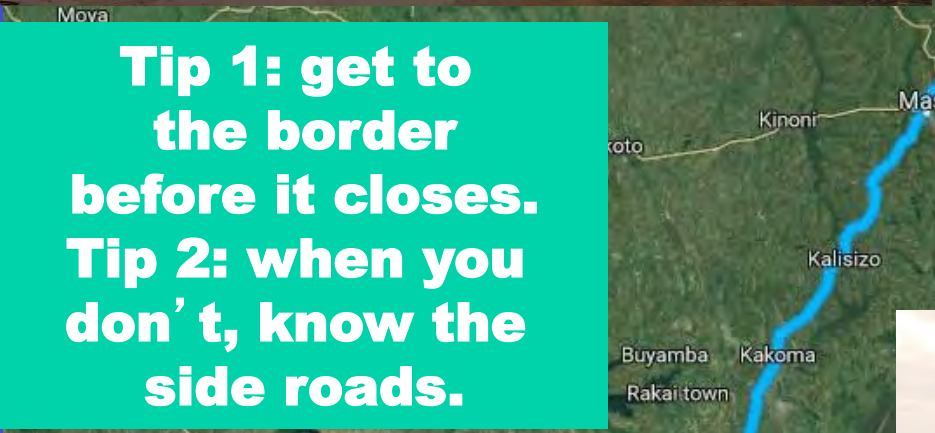
Arriving at Entebbe International Airport:

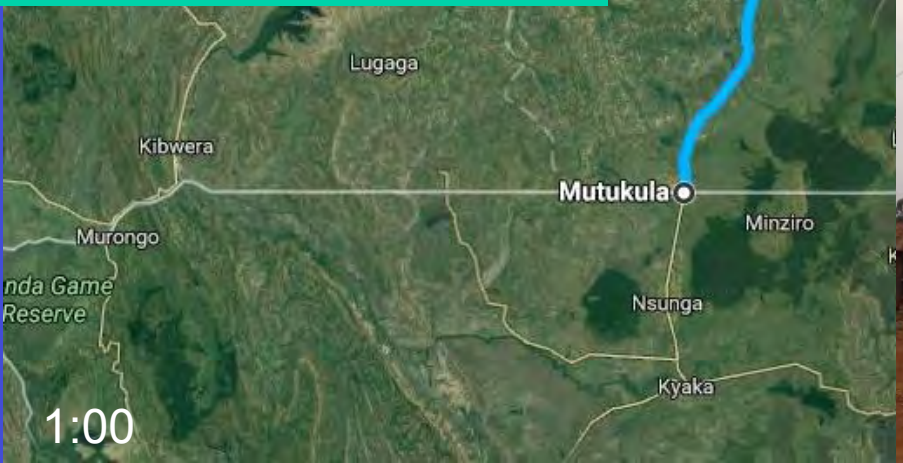
10 checked bags, 2 carryons: $1,600 excess baggage charge

Two taxis required to get to the hotel.



Tip 1: get to the border before it closes.
Tip 2: when you don't, know the side roads.





DAY 4

Tip 3: Don't ask for anything "cooked quick."

Kadugala
Bukakata
Masaka
Kalangala
Bugala Island
Kalisizo
Kasensero Landing Site
Chondo
Mutukula
Minziro
Kanyiragwa
Kanyigo
Nsunga
1 h 21 min
84.5 km
Kolping Hotel
Maruku
Nyagatare
RN13
Kyerwa
Kituntu
RN5
Nkwenda
Kayanga
Byumba
Parc National de l'Akagera
Omurushaka
Kamachumu
RN3
Rushwa
Kashasha
Nshamba
Muleba
Ilemera
RN3
Rwamagana
Rutonde
RN15
Kigarama
Kinazi
Kibungo
Kimisi Game Reserve

Tip 4: Unpaved shortcuts aren't shorter – stay on the tarmac.

DAY 5

Rwanda
Burundi
Parc National de l'Akagera
Kimisi Game Reserve
Biharamulo Game Reserve
Nshamba
Muleba
Kyaka
Kigarama
Kibungo
Kinazi
Butare
Muyinga
Mutumba
Kakonko
Kibondo
Buseresere
Geita
Kasama
Mwanza
Ukerewe Island
Usagara
Sumve
Bunda
Maswa
Bariadi
Kakora
Kisesa
Nyalikungu
Somanda
Bubada
Uyovu
Ushirombo
Old Shinyanga
Shinyanga
Kahama
Isaka
Igurubi
7 h 43 min
420 km
10 h 24 min
588 km
2:00

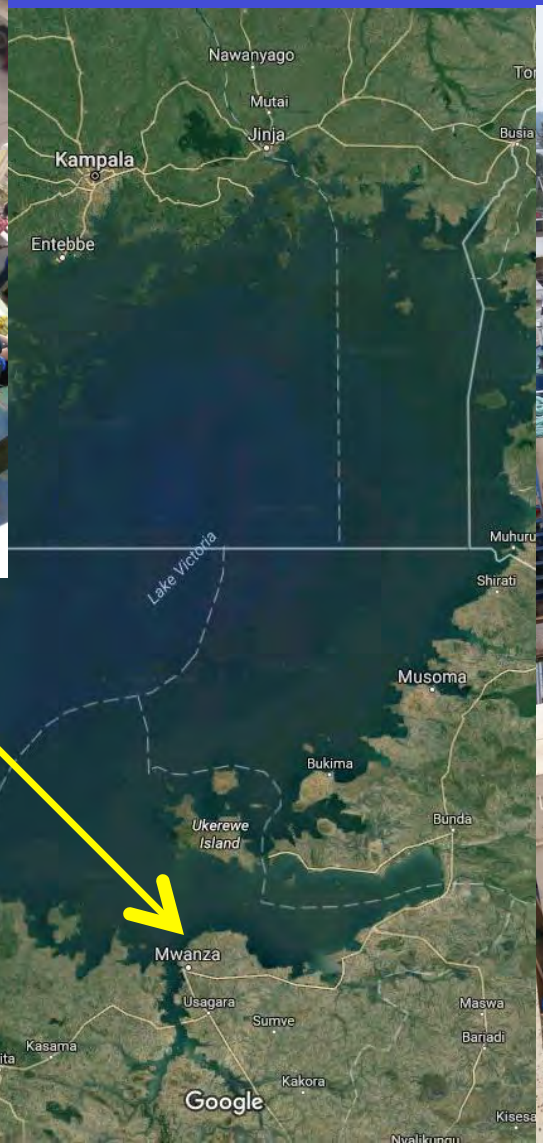
MV *Serengeti*

Built 1988

182 ft length, 38 ft beam, 9 ft draft.

593 passengers, 350 tons cargo

Mwanza – Bukoba
3 round trips/week



3:00

DAYS 6 - 12

DAY 13

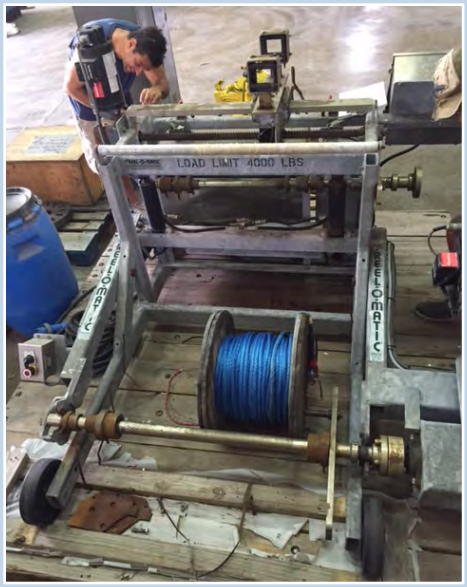
DAY 14


ENTEBBE CRAFTS VILLAGE
Emporium Souvenirs ... too good to leave Behind.
Crafts, Batik, Paintings, Antiques, Maasai Sandals,
Masks, Jewellery, Ebony wood Curvings, etc.
WWW.ENTEBBECRAFTVILLAGE.COM
OPEN 8:00 A.M. - 9:00 P.M.


VICTORIA MALL
VICTORIA MALL
CHECK IN YOUR
WEAPONS HERE


KFC

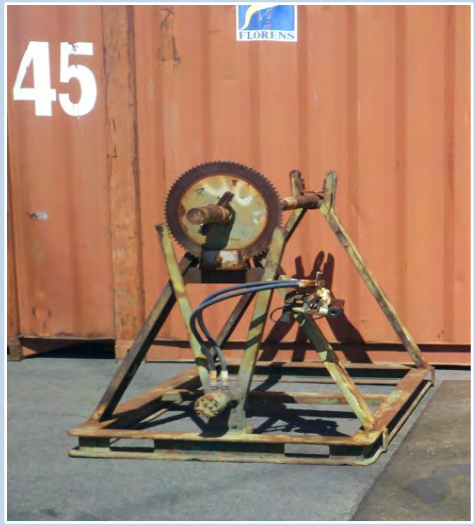
Wire Spooling
Robert C. Seamans
Honolulu, Hawaii



Bingo! Reel-o-matic to off-spool

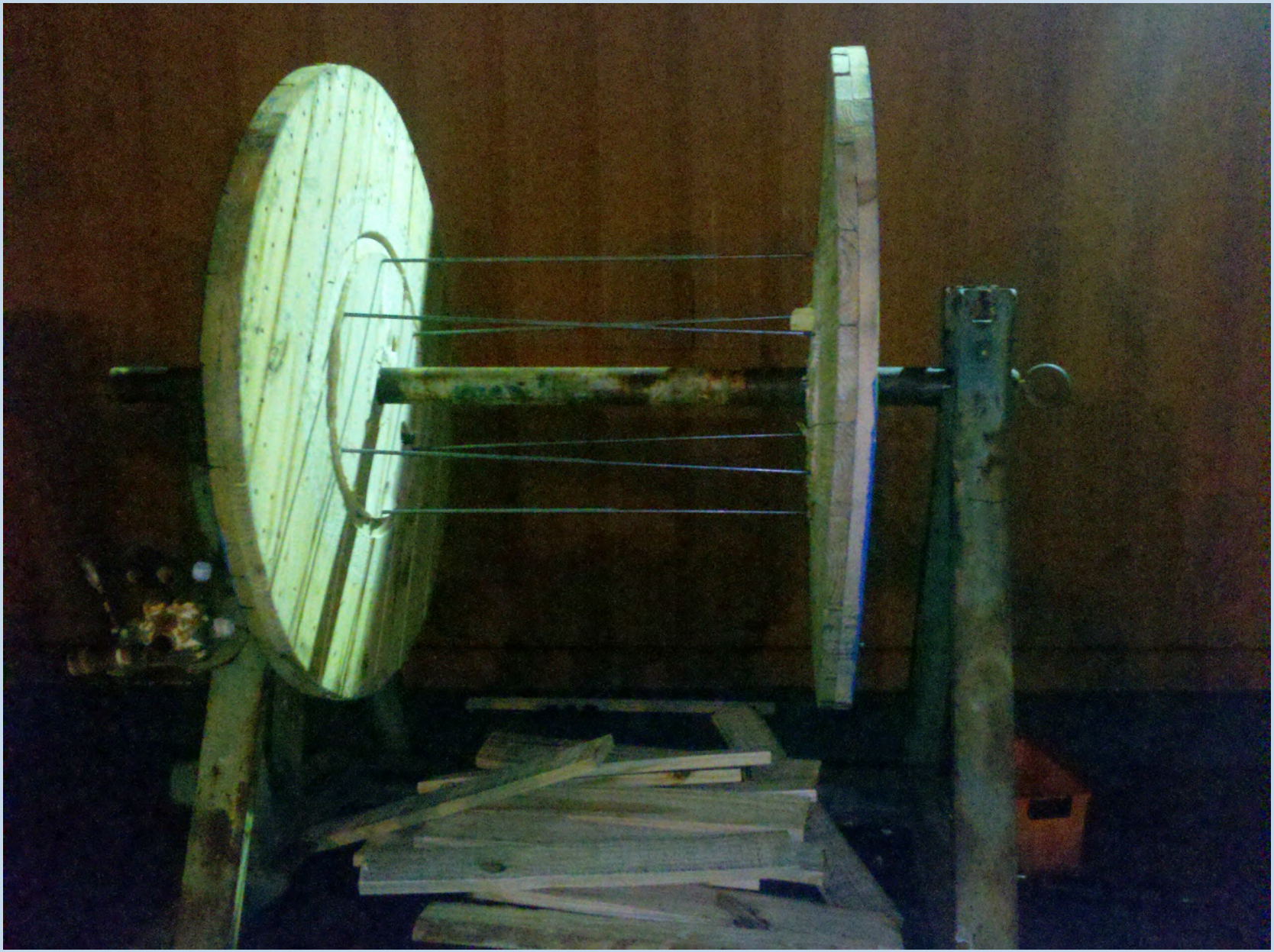
UH spooler:
Too big...

Shipyard Fab:
Too small...



UH "skeleton":
Just Right!

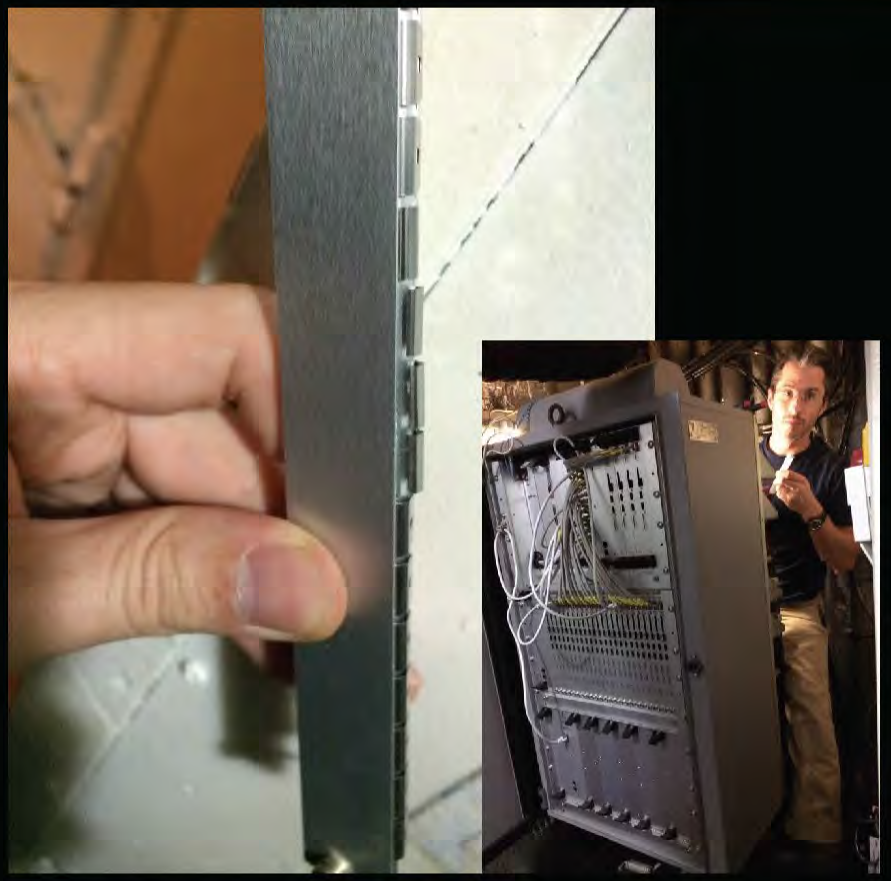
Shipyard-fab arbor hole reducers



Ocean Exploration Trust

Nautilus EM302/PPS (2015)

Spring fingers of adjacent filler panel shorted solder points of PPS board. Components of PPS board (and others) are mounted too close to the edge of the boards, which allow this to occur. No PPS board replacement was necessary after adjusting spring fingers.



USCGC Healy

Operated by the USCG with the support of Base Seattle C4IT, Scripps Institute of Oceanography Shipboard Technical Support, and the Oregon State University Marine Tech Group