



# ECWP UPDATE 2019



Joshua Eaton

UNOLS East Coast Winch Pool

# Personnel

2



**Brian Guest**  
Manager



**Jamie Haley**  
System Maintenance



**Josh Eaton**  
Engineering

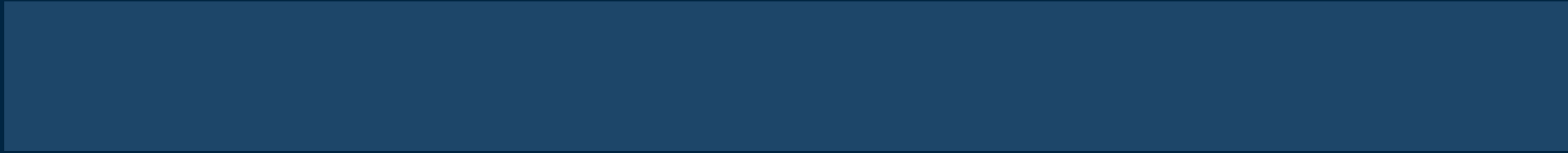
# Mission: Supporting Science

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Assets



# Assets: Winches

5

Moe & Larry

Curly & Shemp

Donnie & Marie

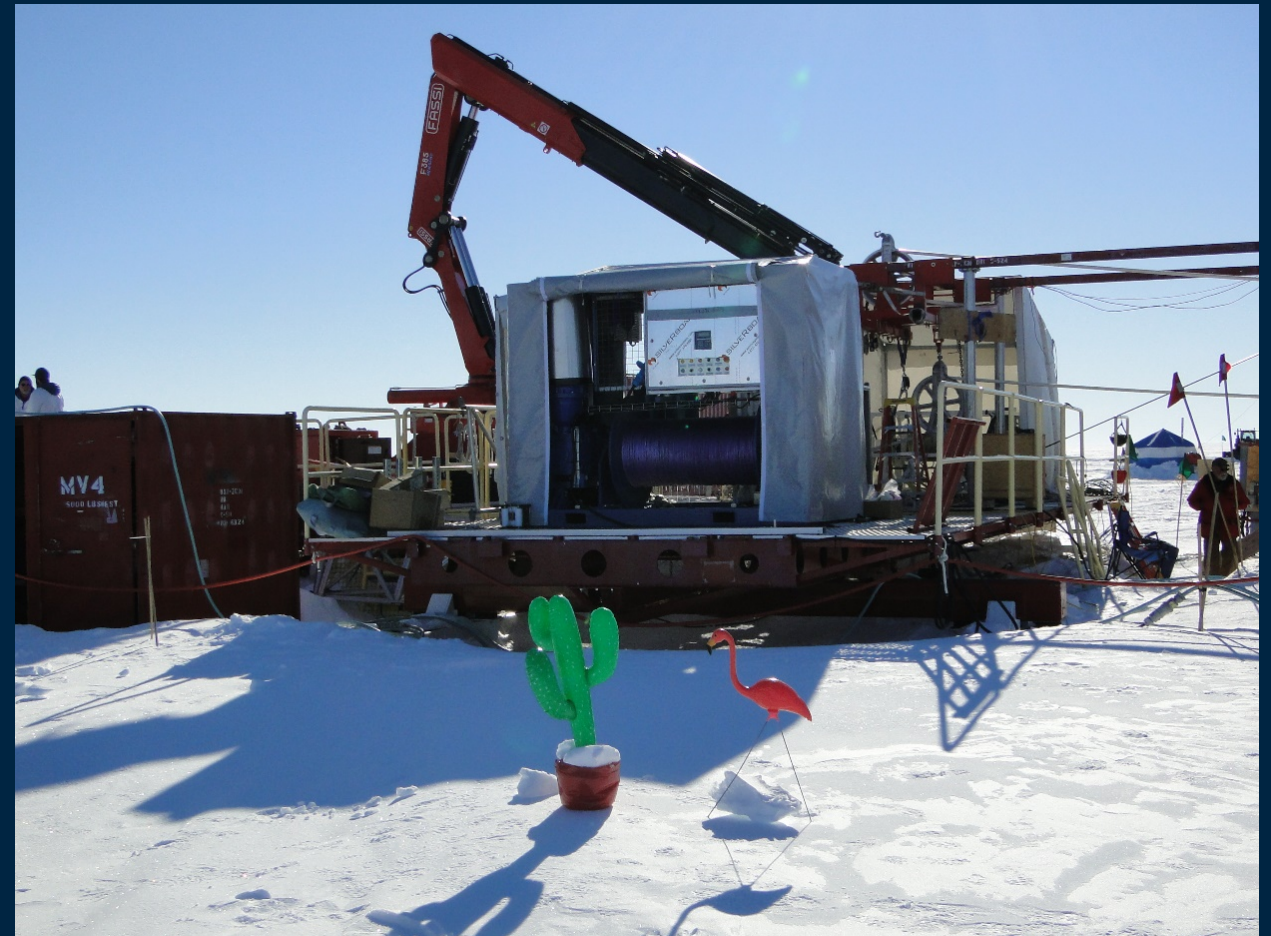
Gloria

Monk

Joe

Cletus & Cooter

Jed



# Assets: Sheaves

6



One ½” Harken Sheave

Two 0.322” Harken Sheaves

One 36” diameter 0.681 Sheave

One 0.322 Trace Metal Sheave

One Wide Groove Metering Sheave

One ¼” Trace Metal Sheave

Access to One 48” diameter 0.681 Sheave



# Assets: Tensioners

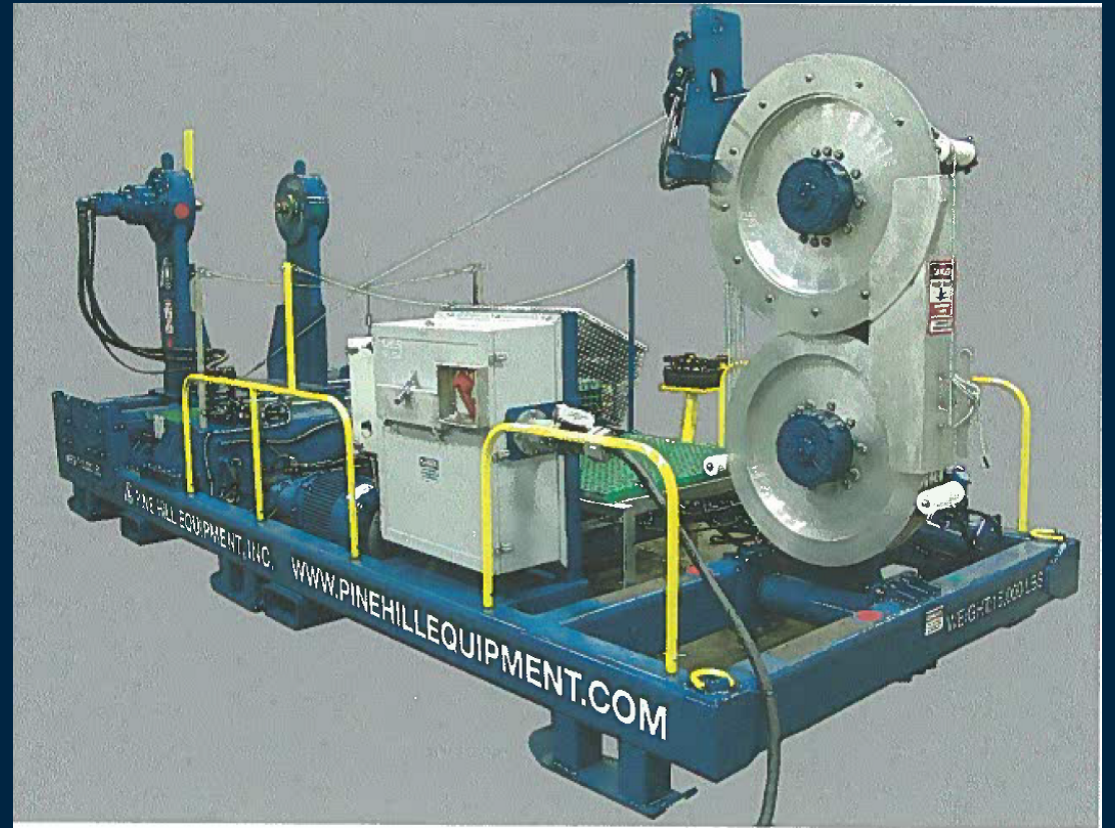
7

Pinehill Tensioner

Barney

Leitheiser Tensioner

Reel-Power Winder Cart



# Assets: Other

8



Two Light Duty Turn Tables

One Medium Duty Turn Table

One 25K and one 50K Load Cells

One Quick Check Tensiometer

Winch Pool Shop

One 3 Phase 220 VAC to 480 VAC Transformer

Multiple Slip Rings

Two MRUs



Utilization



# Requests

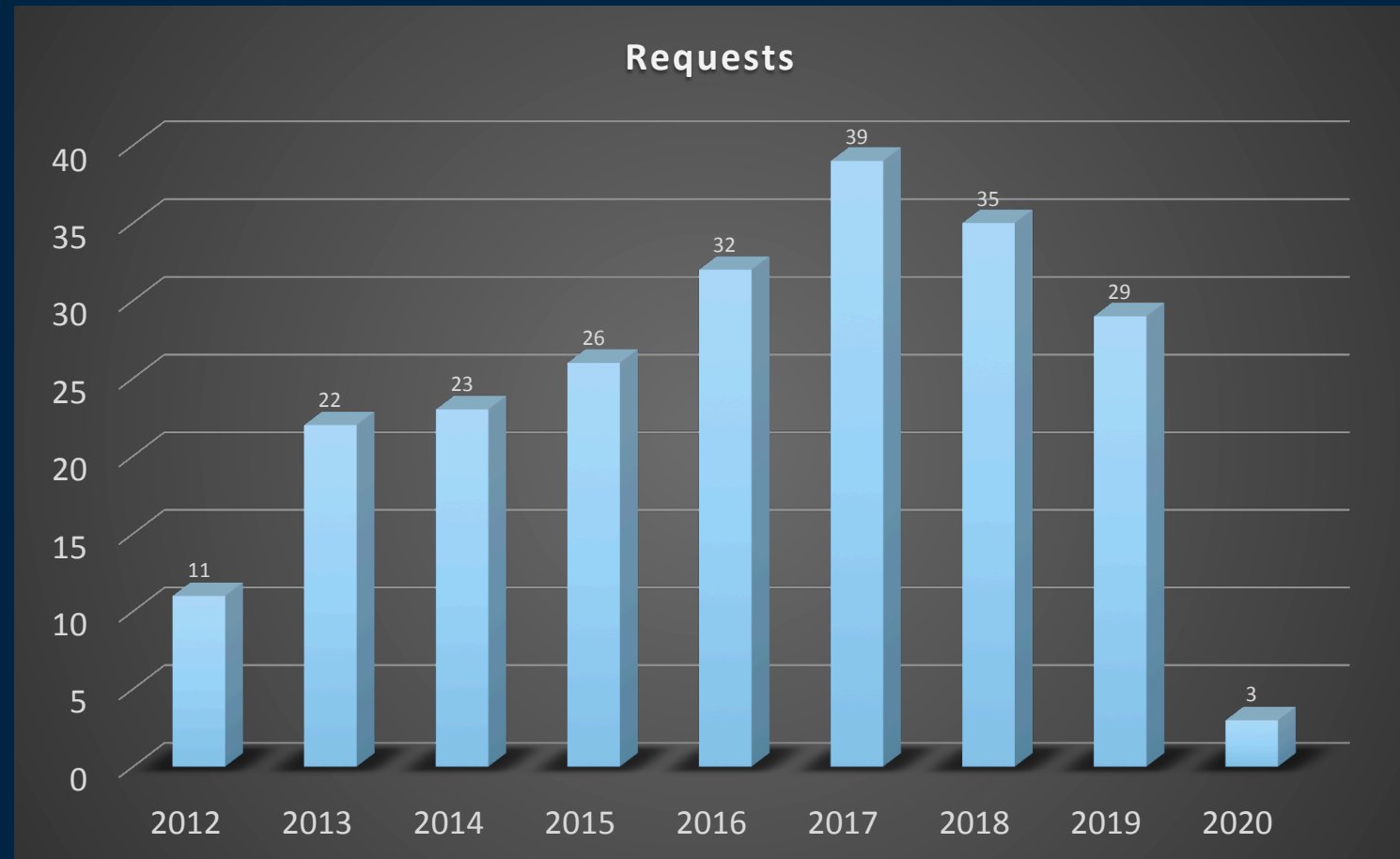
10

Decrease in Requests

Steady Usage Days

35 Requests for 2018

29 Requests for 2019



# Request Form

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Woods Hole Oceanographic INSTITUTION  
**UNOLS East Coast Winch Pool**

AUTHORIZED USERS

Home Request Form Inventory Schedule Contact Us

### Request Form

Requestor\*:    
first last

PI\*:    
first last

Institution Name:

Email Address\*:

Telephone Number(s)\*:

Agency: NSF  or other agency:

Ship:  Cruise:

Mobilization date (mm/dd/yyyy): 04/19/2017  Mobilization port:

Demobilization date (mm/dd/yyyy): 04/19/2017  Demobilization port:


Weight of gear (lbs):

Expected tension (lbs):

Wire used:  Wire length (m):

Use description:

Comments:



Please type what you see (case sensitive):

Submit

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Issues

# Issues

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Shipping Issues

Improper Use of Equipment

Lifting a Bolted Down Winch

Not Contacting Us

Generators

# Not a Capstan

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Projects

# Upgrades and Repairs

16

~~MASH Winch Cabinet Replacement~~ Completed

~~Corrosion Coating Experiment~~ Completed

~~UMiami Hawboldt Consolidation~~ Completed

Change Power Connectors to Meltric DSN - 90%

Magnetometer Winch Upgrade

New MASH Remotes

- Creating a standard remote for ECWP winches
- Proof of Concept Complete
- Prototype under construction

# MASH Winch Cabinet Replacement

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Completed

Added Vibration  
Isolation



# Miami Hawboldt Winch

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Separate  
Components



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# New and Improved!

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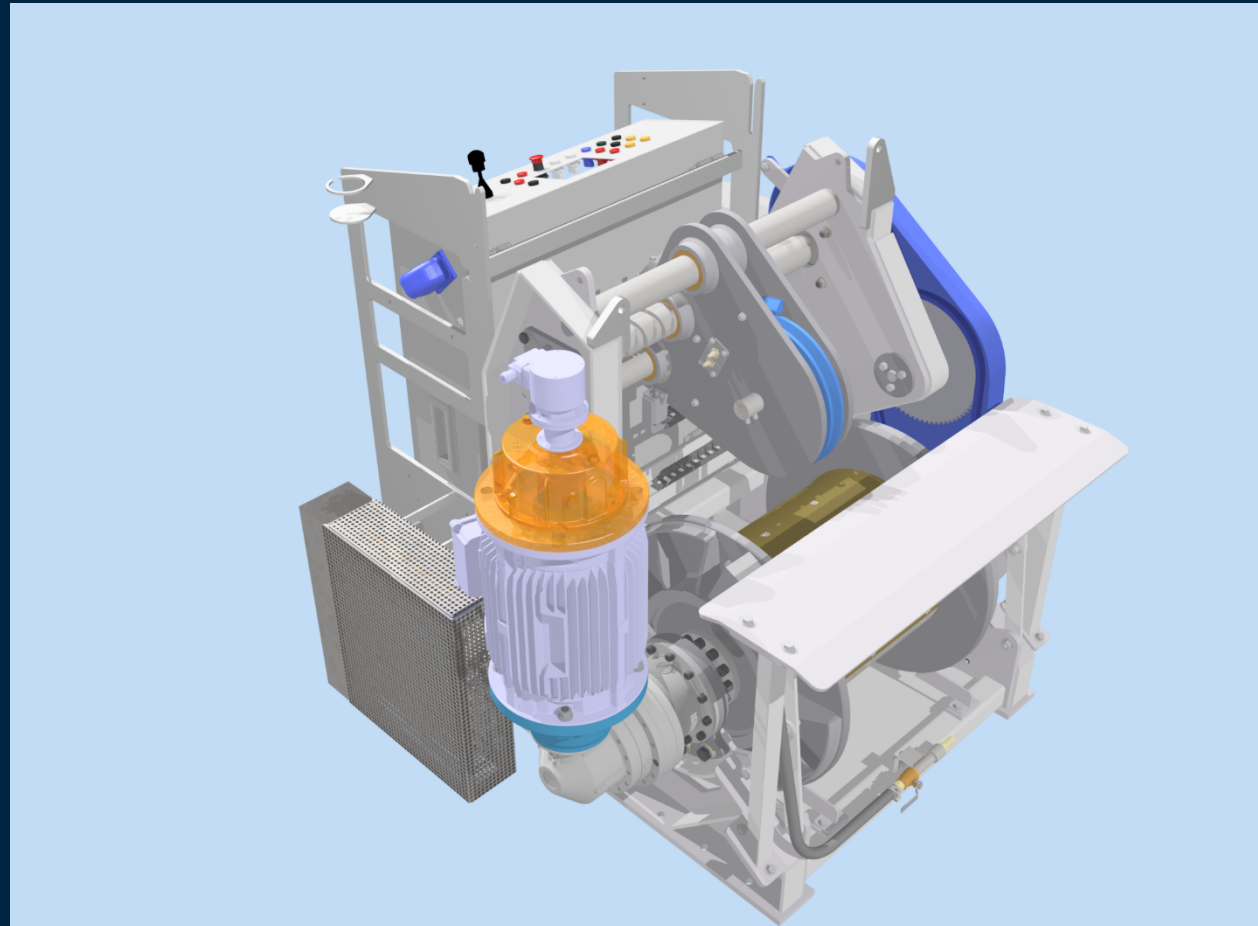
Controls

Operator Platform

Protection Screen

Improved Slip Ring

Cup Holder!





# Meltric DSN Connectors

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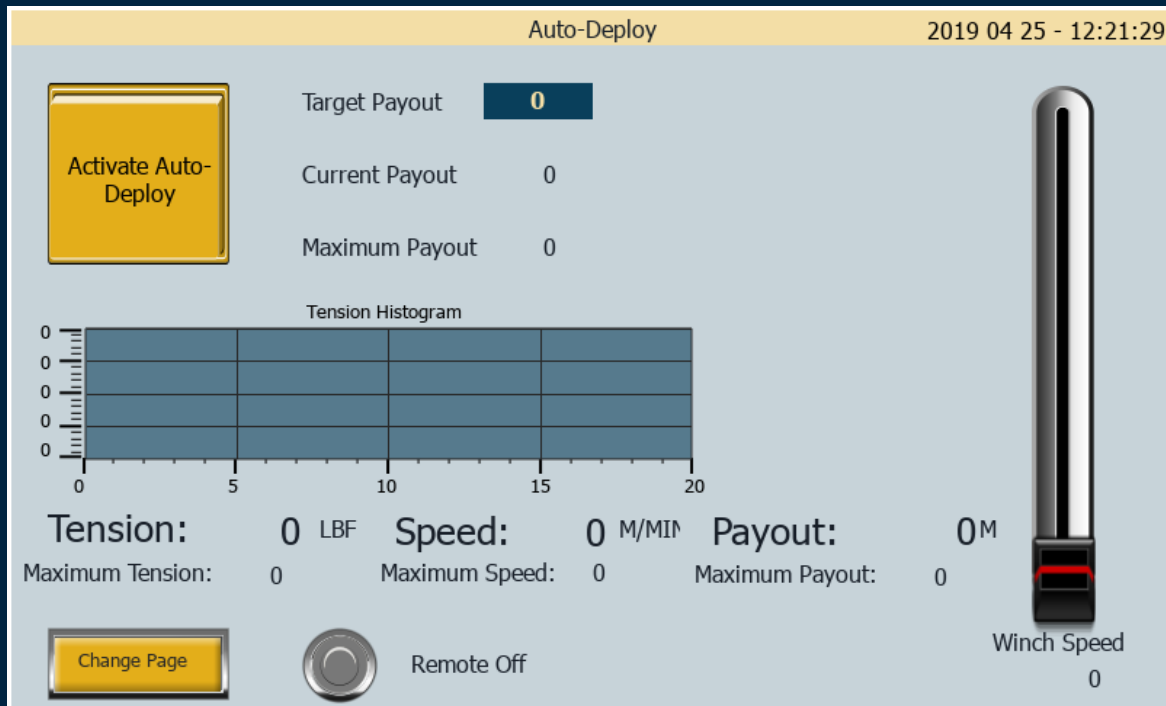
Changing out old connectors

Driving Factor: Explosion

Positive Connection Identification

# ECWP Remote

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Universal Remote for Our Winches

Add Features to Old Winches

Smaller Tether

Smaller Connector

## Roller Post Replaced



## Corrosion Coating: Experiment



# Multipurpose Winch

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# Multipurpose Winch – In Real Life

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6 Foot Drum



Motor in the Top Had







Services

# Services

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Testing Plans

Training

Winch Service

Acquisition Assistance

LCI-90i Oversight

Overboard Handling Questions

Technical Assistance

# Plans: Testing and Analysis



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### MASH2K Test Plan

**1 Introduction**  
The purpose of this test plan is to meet the requirements of UNOLS RVSS Appendix II and to provide the users with safe and functioning equipment. This document exists to quantify and qualify the series of tests needed and to provide a complete and thorough guide.

These tests must be performed continuously operations. If a piece of equipment is out of compliance it must be tested prior to use.

**2 Tests**

**2.1 Functional Tests**

**2.1.1 Verify safe power up**  
Visually inspect the wiring, connections, hydraulic lines, and controls for problems. Apply power to the equipment. Turn on the equipment and look for any faults.

**2.1.2 Verify Operation of Controls**  
Check for spring return on joysticks and momentary switches. Check that joysticks move in the correct direction. Verify that the E-Stop is functional. Verify that the levelwind controls function properly. Verify that all additional controls functional.

**2.2 Static Tests**

**2.2.1 Equipment Required**

- MASH2K
- Sheave
- Power Cable
- Dynamometer
- Overhead Crane
- 125% SWT Weight (400 lbs)
- Suitable Tension Member

**2.2.2 Bare Drum Static Pull Test**  
Wrap a suitable tension member on the drum with a minimum of 8 wraps. Connect the tension member to the sheave dynamometer in the test load point. Using the winch controls fully exercise the maximum haulback force.

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### Hawboldt Test Plan

**1 Introduction**  
The purpose of this test plan is to meet the requirements of UNOLS RVSS Appendix II and to provide the users with safe and functioning equipment. This document exists to quantify and qualify the series of tests needed and to provide a complete and thorough guide.

These tests must be performed continuously operations. If a piece of equipment is out of compliance it must be tested prior to use.

**2 Tests**

**2.1 Functional Tests**

**2.1.1 Verify safe power up**  
Visually inspect the wiring, connections, hydraulic lines, and controls for problems. Apply power to the equipment. Turn on the equipment and look for any faults.

**2.1.2 Verify Operation of Controls**  
Check for spring return on joysticks and momentary switches. Check that joysticks move in the correct direction. Verify that the E-Stop is functional. Verify that the levelwind controls function properly. Verify that all additional controls functional.

**2.2 Static Tests**

**2.2.1 Equipment Required**

- Hawboldt
- Sheave
- Power Cable
- Dynamometer
- Overhead Crane
- 125% SWT Weight (3000 lbs)
- Suitable Tension Member

**2.2.2 Bare Drum Static Pull Test**  
Wrap a suitable tension member on the drum with a minimum of 8 wraps. Connect the tension member to the sheave dynamometer in the test load point. Using the winch controls fully exercise the maximum haulback force.

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### Canilevered Dynacon Winch Test Plan

**1 Introduction**  
The purpose of this test plan is to meet the requirements of UNOLS RVSS Appendix II and to provide the users with safe and functioning equipment. This document exists to quantify and qualify the series of tests needed and to provide a complete and thorough guide to those tests.

These tests must be performed twice in every five year period with no longer than 3 years between any two tests for continuous operations. If a piece of equipment is out of compliance it must be tested prior to use.

**2 Tests**

**2.1 Functional Tests**

**2.1.1 Verify safe power up**  
Visually inspect the wiring, connectors, hydraulic lines, and controls for problems. Apply power to the equipment. Turn on the equipment and look for any faults.

**2.1.2 Verify Operation of Controls**  
Check for spring return on joysticks and momentary switches. Check that joysticks move in the correct direction. Verify that the E-Stop is functional. Verify that the levelwind controls function properly. Verify that all additional controls functional.

**2.2 Static Tests**

**2.2.1 Equipment Required**

- Canilevered Dynacon
- Sheave
- Power Cable
- Dynamometer
- Overhead Crane
- 125% SWT Weight (4375 lbs)
- Suitable Tension Member

**2.2.2 Bare Drum Static Pull Test**  
Wrap a suitable tension member on the drum with a minimum of 8 wraps. Connect the tension member to the sheave dynamometer and the dynamometer in the test load point. Using the winch controls fully exercise the maximum haulback force.



# Winch Assistance



# Atlantic Explorer

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Winch Controls

DESH5

DESH4

COM7

System Mapping

# Support

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## Atlantis

- Provided Tensiometer
- Measuring Methodology

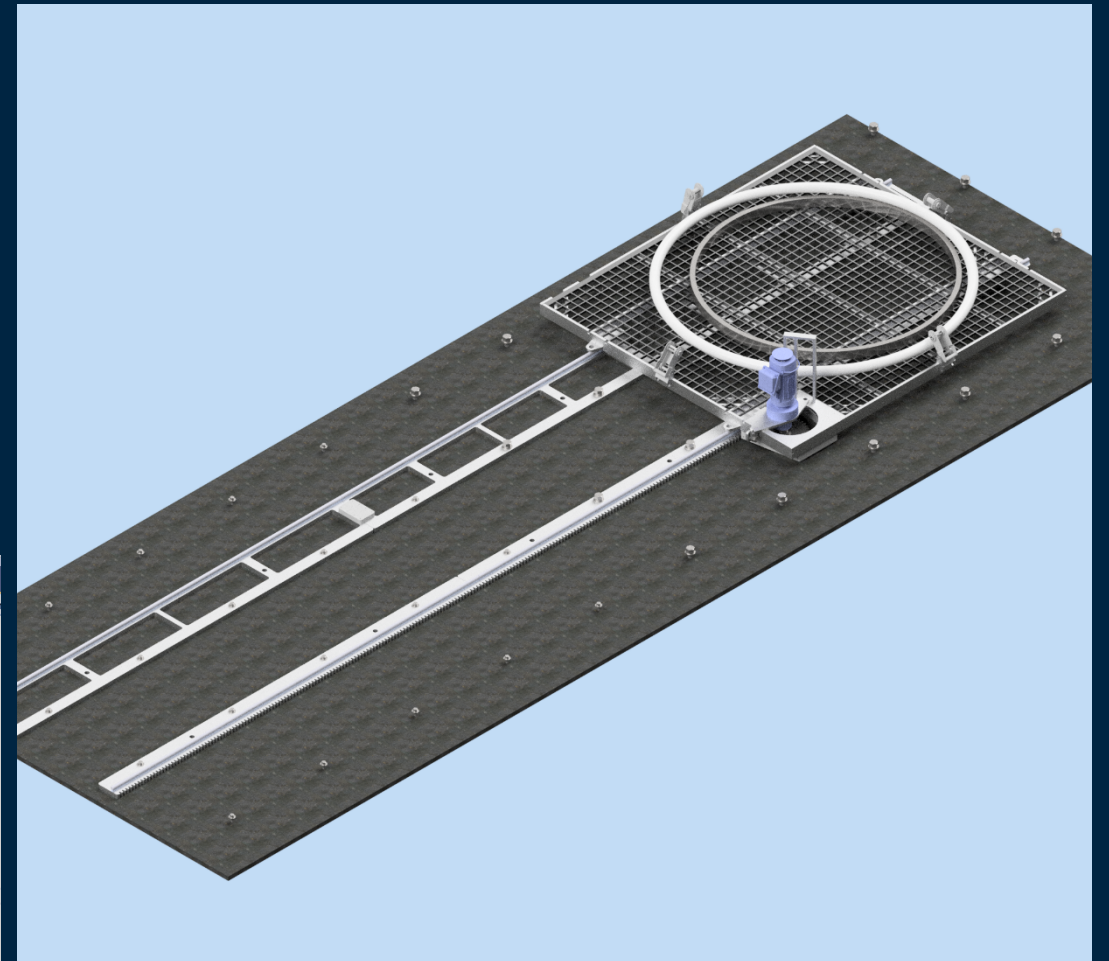
## Armstrong

- CTD Rosette Track
- Active Heave Compensation

## OSU Coring Group

- Wire Log Analysis

The screenshot shows a software window titled "Winch Data Parse". It features a "Selected Winch" dropdown menu set to "SIO Traction Winch". To the right, there are input fields for "Cruise Name" (with "Enter Name" as a placeholder and an "OK" button), "Combined File Name" (labeled "label4"), "Processed File Name" (labeled "label5"), "Open File" (labeled "label6"), and "Data" (labeled "label7"). Below these are two dropdown menus for "Minimum Payout" (set to 30) and "Minimum Tension" (set to 0). At the bottom, there are two date pickers for "Wrong Date" and "Correct Date", both set to "2019-04-25". A "Folder Select" button is located at the bottom left, and "Combine Files", "Process Casts", and "Process Date/Time" buttons are at the bottom right.





# Winch Acquisition

# Acquisition Assistance

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University of Hawaii LARS Replacement

Skidaway Trace Metal Winch







# Future Projects

# Upcoming Projects

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Next Generation Levelwind

Testing 9/16 3x19 on 0.68 Sheaves

Heave Sensor

Winch Test Platform

M2M Gateways

Improve Website

Document Repository

