

Training Format

- * 1st Day
 - * Definitions
 - * Background – primarily from UNOLS Winch & Wire Handbook
- * 2nd Day
 - * Appendix A including examples
 - * Use of Spreadsheet for calculating loads
 - * Open book test/review
 - * LCI 90 Training
 - * Wire Pool database (WHOI Presentation)
 - * Visit to vessel

Workshops to Date

RSMAS 9 (included visit to vessel)

RVTEC at BIOS (~80) (included visit to vessel)

WHOI 17 (included visit to vessel)

URI 8

LUMCON 11 (1/2 Scientist)

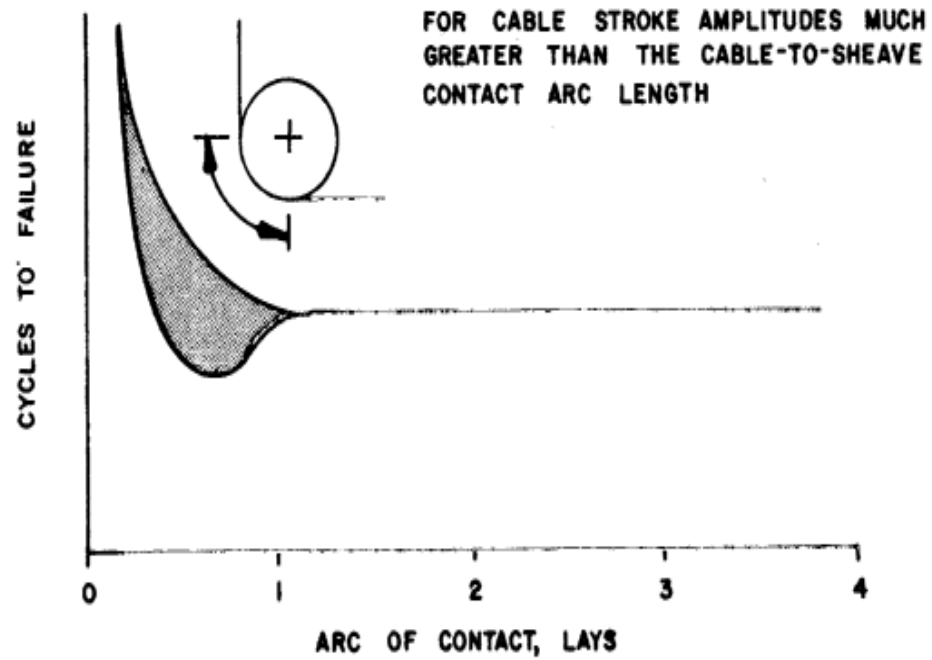
Additional Workshops

- * Northwest
 - * Measurement Technology Northwest - space limit ~ 10
 - * UW Week of May 16th
- * Southwest
 - * SIO 21-22 June
- * East Coast?

Feedback

- * Sheave sizes - especially rollers
- * Load testing
- * Reluctance to use weak links
- * Scientist supplied tension members and equipment will be a problem
- * Logbooks need to be fully automated

Roller Driver



Wire Eater



Still Undesized



Eliminate





Water Weights



Sizes of Water Weights

Water Weights Water Filled Proof Bags

Tonnes	Capacity US Short tons	Pounds	Size Empty & Rolled in ft.	Empty lbs.	Overall Size When Filled Height ft.	Diameter ft.
1	1.2	2204	3X2X2	55	7.8	4
2	2.4	4408	3.5X2X2	100	12	5.5
2L	2.4	4408	3.5X2X2	90	7	6.5
3	3.3	6612	2.5X2X2	145	13.5	6.5
5	5.5	11020	4X2.5X2.5	220	15	7
5L	5.5	11020	4X2.5X2.5	210	8.5	9
10	11	22040	4X3X3	300	19	8
12L	13.2	26448	4X3X3	310	13.5	10
20	22	44080	4X3.5X3.5	510	19	12
35	38.6	77140	6X4X4	750	23	14

Websites:

http://www.seaflex.co.uk/water_test_weights.html

<http://www.waterweightsinc.com/en/lifting-equipment-testing.html>

<http://doowin-dooflex.com/Products&Solutions/Crane-Test-Waterbags.html>

Calibration

- This chart shows all of the load measurement combinations that would be required for the high end calibration point as required in Appendix A.
- For all standard UNOLS tension members, a single 25,000 dynamometer with an accuracy of 0.1% will meet the requirements.

Tension Member	Nominal Breaking Load lbs.	FS	Calibration Load lbs.	Accuracy Required	Accuracy in lbs.
1/4" 3x19	6,750	2.5	2,700	4%	108.0
1/4" 3x19	6,750	2.0	3,375	3%	101.3
1/4" 3x19	6,750	1.5	4,500	3%	135.0
1/2" 3x19	25,700	2.5	10,280	4%	411.2
1/2" 3x19	25,700	2.0	12,850	3%	385.5
1/2" 3x19	25,700	1.5	17,133	3%	514.0
9/16" 3x19	32,500	2.5	13,000	4%	520.0
9/16" 3x19	32,500	2.0	16,250	3%	487.5
9/16" 3x19	32,500	1.5	21,667	3%	650.0
.322 Cable	11,600	2.5	4,640	4%	185.6
.322 Cable	11,600	2.0	5,800	3%	174.0
.680 Cable	40,000	2.5	16,000	4%	640.0
.680 Cable	40,000	2.0	20,000	3%	600.0
.681 Cable	46,000	2.5	18,400	4%	736.0
.681 Cable	46,000	2.0	23,000	3%	690.0

Dynamometer with Remote Display

- Dillon EDx-25K
 - +/- 0.1% accuracy
 - +/- 25 pound accuracy
- Remote Display
 - Wireless
 - Allows personnel to be far from load
- Dynamometer **must** be calibrated annually



Quick Check

- Dillon “Quick Check” 8000
 - Wire sizes: 3/16 inch through 3/4 inch
 - +/- 3% accuracy (+/- 240 lbs. calibrated to specific wire size & type)
 - +/- 5% accuracy (+/- 400 lbs. with same wire diameter as calibrated but different wire type)
 - Concern about small diameter rollers
 - Must be calibrated annually

