UNOLS Deck Sockets
Compliance with RVSS, 11th ed.

Presented by:
Marcel Beaudin
Einhorn Engineering, PLLC
Beaudin Personal Experience
- Project Engineer with EE since 2020.
- Seward Marine Center Port Engineer
- R/V Sikuliaq 1st Engineer
- Mariner since 1996

Past UNOLS Support
Deck Sockets Background

- UNOLS vessels include 1”-8 UNC threaded bosses in a 24” x 24” grid for securing gear to the ship deck.

- Used to transfer loads from deck mounted equipment to the ship structure.
Deck Socket Testing Requirements

Testing

RVSS, 11th edition:
Mandatory compliance for ARF unless “not practical or economical”

- B.4.4.1: Requires routine testing of deck sockets used as part of OHS
- Fixed and portable OHS systems must be tested every 5 years
- B.4.1: Requires testing to 125% of Safe Working Tension using a calibrated instrument
R/V Sikulniaq Case Study

- Test load determined from delivery documentation
- Quantity 1000+

**DESCRIPTION** | **QTY**
--- | ---
EXTERIOR DECK SOCKET, FLUSH | AS REQD.

**QTY = 1019** (Main Deck) + 01 Level + 02 Level

**GENERAL NOTES**
4. EXTERIOR STEEL DECK BOLT–DOWN FITTINGS: 7,000 Lb. CAPACITY FOR VERTICAL AND 45 DEGREES FROM VERTICAL LOADS.
Previous testing methods:

- Cumbersome and labor intensive
- Require use of ship’s equipment
- Require multiple personnel to perform each test
- Time consuming
- Possibility of damage by over-tensioning

“Can we just test a representative sample?”
Einhorn Engineering Solution

- Advantages
  - Easy to use
  - Kit is self-contained
    - (Don’t need to use ship’s cranes or equipment)
  - Saves time – needs one person only
  - Pulls to pre-calibrated tension
  - Portable and easily stowed
Assembly Overview

- Threaded rod
- Test frame
- Polyester sling
- 1”-8 UNC hoist ring
- Lifting eye for rigging
- Carting handle
- Pneumatic tires

Weight of test assembly: 190 lbs
Calibration & Validation
Thank you!
Marcel Beaudin
Project Engineer
Einhorn Engineering, PLLC
marcel@einhornengineering.com
Deck Socket Testing Service

- Einhorn Engineering, PLLC offers on-site testing services with the following advantages:
  - Lower upfront cost (no purchase of equipment necessary)
  - Consistent testing methodology used
  - Test Reports provided that satisfy requirements