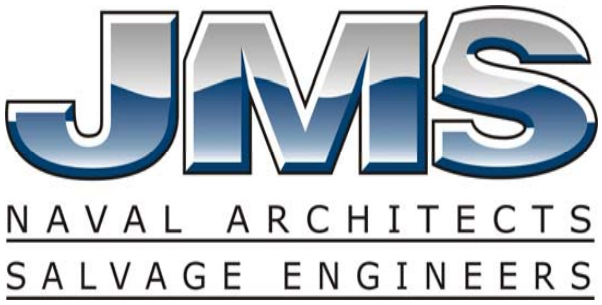


JMS Naval Architects & Salvage Engineers

Inspection Perspectives as

RVSS Appendix A becomes implemented

Ted Colburn

November 2009

Inspection Perspectives as RVSS Appendix A becomes implemented

- Operator selects Factor of Safety (FS) based on operational needs or system configuration.
  - If what is needed exceeds what can be achieved by the configuration of components there is an opportunity to comment on the ship condition form.
- Operators will be completing a “Rope and Cable Safe Working Load” table.

Rope and Cable Safe Working Loads

Vessel Name: R/V Lollipop

Date: 16-Nov-09

1	2	3	4	5	6	7	8	9	10	11	
System Description	Rope/Cable	NBL (lbs)	ABL (lbs)	Test Date	Minimum Sheave DIA (in.)	Grooving Code	D/d	Monitoring Freq.	FS	SWL (lbs)	Comments
DYNACON Trawl Winch	0.5" DIA, 3 x 19	25,700	**22,500**	8/15/08	20	B	40	3.0 Hz	2.5	9000	
									1.0	0	
Markey DUSH 5	0.322 DIA	**11,600**	13,920	4/4/07	16	B	50	3.0 Hz	2.5	4640	
									1.0	0	
									1.0	0	
									1.0	0	
									1.0	0	

Each row in the form represents a particular winch system, wire rope or cable, and fairlead combination.

Column 1: A brief description of the winch system

Column 2: The rope or cable used on that particular winch

Column 3: The Nominal Breaking Load (NBL), defined as the manufacturers minimum published breaking load of the rope or cable described

Column 4: The Actual Breaking Load (ABL), defined as the actual load required to pull the rope or cable to destruction as determined by testing.

Column 5: Date the ABL testing was done.

Column 6: The minimum sheave tread diameter in the sheave train that is used to overboard the cable. **This includes portable hanging blocks.**

Column 7: Cable grooving codes as follows:

A = Matches cable diameter with 135-150¡ of support (per Winch and Wire Manual)

B = 1.5 x cable diameter or less

C = Flat or wide grooved (greater than 1.5 x cable diameter)

Column 8: The ratio of sheave diameter (D) to the rope or cable diameter (d).

Column 9: The sampling frequency of the tension monitoring equipment.

Column 10: The Factor of Safety (FS) **selected by the operator** based on system components (See Appendix A).

Column 11: The Safe Working Load (SWL) is the Ultimate Load* divided by the FS.

*The Ultimate Load for these purposes is assumed to be either the NBL or ABL. If the ABL is greater than or equal to the NBL, the NBL shall be used by the vessel operation. If the ABL is less than the NBL, the ABL shall be used by the vessel operation.

Quick Look at Two Factors of Safety

- FS = 5.0
- FS = 2.5
  - Bold lettering will highlight where there is an increase in requirements.

When 5.0 FS Selected

- Determine Cable/Wire Safe Working Load (SWL)
- Post Cable/Wire SWL in clear view of the winch operator
- Have ability to keep load < SWL
  - Tensiometer
  - Calculated such as estimated in Appendix A with “g” factor of 1.75.
- Appropriate Sheaves: D/d ratio

When 5.0 FS Selected (Cont.)

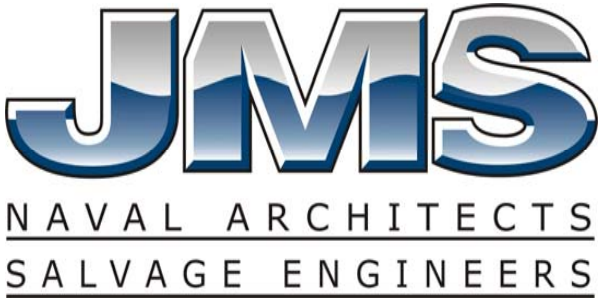
- Log(s) for each Cable/Wire
  - Inventory/History
    - Testing up to SWL load every 2 years
    - Cutbacks
    - Spooling Operations
    - Lubrication (if any)
    - Wire Train Description
  - Running Use Log
    - Measured or Calculated maximum load for each cast
    - Payout for each cast
- Operator qualified in writing by master and owner

When 2.5 FS Selected

- Determine Cable/Wire Safe Working Load (SWL)
- Post Cable/Wire SWL in clear view of the winch operator
- **Have ability to keep load < SWL**
  - **Actual from monitoring system (not calculated)**
  - **Tensiometer display with 3 Hz resolution**
  - **Tensiometer logging at 3 Hz**
  - **Recalibrated 6 months to be within 4% at Load**
- **Audible and visual tension alarms w/data logging**
- **Establish Safety Zones**
- Appropriate Sheaves: D/d ratio **and groove**
- Cable/Wire **break** testing every 2 years

When 2.5 FS Selected (Cont.)

- Log(s) for each Cable/Wire
  - Inventory/History
    - **UNOLS wire identifier**
    - **Break Testing**
    - Cutbacks
    - Spooling Operations
    - Lubrication (if any)
    - Wire Train Description
      - **Including winch and system manufacturer**
  - Data Log
    - **Number and/or duration of deployments between testing**
    - **Measured maximum tension for each cast**
    - **Measured maximum payout for each cast**
    - **Alarms**
- Operator qualified in writing by master and owner
  - **Through a formal training program**



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