



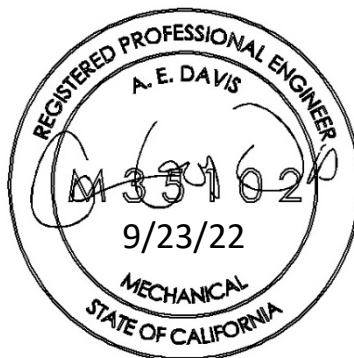
OHS Test Procedure for R/V Roger Revelle Trawl OHS

Revision 9 /23/2022

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By

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This document has been prepared to satisfy the requirements set forth in Appendix B of the UNOLS Research Vessel Safety Standard (RVSS) 11th Edition.

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1. UNOLS RVSS Appendix B requires OHS be tested to 125% of their SWT every five years.
2. This system is commonly used with .681" Power Optic cable, which has a nominal breaking load of 42,000 lb. It may be used with a safety factor as low as 2.0, and therefore its SWT may be as high as 21,000 lb.
3. This system is commonly used with .680" COAX cable, which has a nominal breaking load as high as 40,000 lb. It may be used with a safety factor as low as 2.0, and therefore its SWT may be as high as 20,000 lb.
4. This system is commonly used with 9/16" 3X19 wire rope, which has a nominal breaking load of 32,500 lb. It may be used with a safety factor of 1.5, and therefore its SWT may be as high as 21,667 lb. Of the 3 tension members used with this system, this is the greatest SWT, so it will be used to determine the system's test load.
5. The minimum required test load is 125% of the greatest SWT, which is 27,083 lb.
6. In this procedure the test load is 27,083 lb., which is less than the safe working tension of the Markey DUTW-11 winch (30,000 lb.¹), the Smith Berger model 452-N flag block (40,000 lb.²), the Fritz Culver a-frame (40,000 lb.³), and the Smith Berger model 32N-HB hanging block (48,750 lb.⁴).
7. Verify the Dynamometer that will be used is properly calibrated.
8. Hang the Smith Berger 32N-HB block from the center padeye. Hang it with a working line around it so the test line may be easily reeved through the block.
9. Remove the terminations, as required, and completely haul in the tension members on both of the DUTW-11 winch storage drums.
10. Determine which of the storage drums will be used to test the OHS. If only one of the storage drums is fitted with 9/16" wire rope, the drum with the wire rope will should be used.

¹ Maximum Capability Document (using UNOLS RVSS Criteria) for Markey DUTW-9-11 Oceanographic Traction Winch, S/N 16363. Markey Machinery Company Inc., March 17, 2014.

² With 110 deg. of wrap or less. See GENERAL ARRANGMENT MODEL 542-N FLAG BLOCK. Smith Berger Marine Inc. Drawing no. B54325. October 24th, 2013.

³ When used with the trawl winch to do a station keeping deployment from the center padeye. See p. 6 of R/V Roger Revelle A-Frame Maximum Capability Document, Rev. A. The Glostin Associates, Inc. December 2014.

⁴ GENERAL ARRANGEMENT MODEL 32-N HANGING BLOCK. Smith Berger Marine Inc. Drawing no. B63591. June 20, 2019.

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11. Clean the traction sheaves, and levelwind sheave of the storage winch that will be used for the test, removing all traces of any lubricant. Debur them as required to remove any sharp features that would snag or cut the test line.
12. About 10 wraps of the test line will be wound onto the storage drum beside the bitter end of the 9/16" wire rope. Cover the area the test line will cover with a layer of 1/8" thick rubber (about 1 ft wide x 21 ft long). Wrap light cordage around it to hold it in place.
13. Reeve a length (about 500 ft.⁵) of 9/16" diameter Cortland Plasma Hi-Co line (minimum breaking strength 37,900 lb.) through the OHS with a spliced eye on its working end. This will be the test line.
14. Lash the test line to the working end of the 9/16" wire rope.
15. Attach the Dynamometer to the spliced eye on the test line. Ensure it's functional.
16. Attach a water bag to the dynamometer.
17. Haul in the test line until the water bag is positioned to be lifted overboard as the a-frame is placed in its stops. Ensure there are about 10 wraps of the test line on the winch drum. Ensure these wraps are on top of the fabric-reinforced neoprene.

Note: Until several wraps of the test line are on the storage drum, the storage drum will have to be operated in manual mode to prevent the working line (if used) and the lashing on the test line from breaking.
18. Carefully move the a-frame outboard, taking care to ensure the water bag and test line don't get hung up, and the dynamometer isn't two-blocked in the process. Pay in/out with the winch as required.
19. With the a-frame in its stops, ensure the water bag is in the proper position for the test, i.e., clear of the vessel and the water below, not above anything but the water below, and with dynamometer as close as possible to the hanging block (the test line will stretch considerably with the test load on it). Pay in/out with the winch as required to reposition the block.
20. Evacuate the winch room. Post signage indicating testing is occurring, and no personnel are to enter the winch room during the test.

⁵ See 170-02-01 REVA TEST LINE LENGTH.xlsx.

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21. Slowly begin to fill the water bag until the dynamometer indicates 27,083 lb. Wait 5 or more minutes. Inspect the system for signs of failure while you wait.
22. Release the water from the water bag.
23. Move the a-frame inboard, swinging the empty water bag over the working deck. Pay in/out with the winch as required.
24. Remove the water bag and dynamometer from the test line.
25. Remove the test line from the OHS.
26. Let the vessel master and the winch and wire engineer know when the test is complete so they can make note of it in the appropriate vessel logs and in the UNOLS wire pool database.
27. Give the test line to the winch and wire engineer, who will inspect it, keep track of the number of tests it's used for, have it tested, or discard it as required.