DISCOVER THE OCEAN. UNDERSTAND THE PLANET.

Ocean observing Workshop
Ocean networks Canada
Barkley Node Trawl Event & Repair

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Overview

Problem (2015)

- TRF is rolled by a trawl wire, Node ejected
- Science and CTA cables under tension, likely damaged
- Loss of communications to the Node

Description (2015)

- Fibre in connector hose damaged (main communications)
- Fibre in science cables damaged
- CTA replaced, and spare Node deployed (outside TRF)
- Wet mate-able HV connector failed on power up
- TRF accidentally flipped and subsequently recovered, along with Barkley and Spare Nodes (May 2015)

Solution (2016)

- Removed HV connector from CTA/Node linkage and hard wired power into the Node
- Node foam pack removed and the CTA and Node “guts” were bolted to the TRF frame
- Deployment of the CTA/Node/TRF was done off the back deck of a cable ship with support from an ROV on a different vessel

Lessons

- Need to remain engaged with the fishing community
- HV connectors from original installation not reliable
- Node locks would have prevented bulk of the damage
- Cable ship is a viable platform for Node repairs
Problem: Dislodged Node & Damaged cables (Jan. 12, 2015)

The Node hanging out of the TRF, all weight (~700 lbs) hanging on the science and communications cables

The Node after being repositioned to the top of the TRF by the ROV, just prior to unplugging of connectors
Description: Repair Operation (May 2015)
Solution: The Barkley Node, Re-configured

**Barkley Node - New configuration**

- Spare Node used (tested after connector failure)
- No HV connector, hardwired between CTA and MVC
- Optical connector retained
- Foam pack removed, overall weight reduced by 5000+ lbs
- Node bolted directly to the TRF frame
- Deployed off a cable ship, after CTA cable end terminated to cable on the seabed
Lessons Learned, Best Practice

- Reduce risk by remaining engaged with the fishing community re: locations
- HV connectors from original installation not reliable and should be phased out
- Assumptions about what is possible to be revisited - Node locks would have prevented bulk of the damage
- A cable ship is a viable platform for Node repairs
- Simple is better