

Spring 2007



Saanich Inlet & Strait of Georgia

KEEPING CURRENT

FUNDING NEWS

Our application to NSERC for operational funding was successful. Between NSERC and other commitments, we received about \$1M a year for the next three years. These funds will pay staff to oversee and maintain the Facility while also building the research “clientele” and assuring further funding. A substantial part of the operating costs lie in field maintenance and keeping instruments functioning year-round. The VENUS staff will run two maintenance cruises with ROV each year. In addition, funds will support continued development of data supply and display.

The VENUS Team tips its collective hat to the researchers who agreed to be named on the proposal and to those who came to speak on behalf of the Facility during the site visit in January.

Cable Deployment in Strait of Georgia



The Cable Ship (CS) Wave Venture, owned and operated by Global Marine Systems Ltd., deploys the eastern (shallow) Node base in the Strait of Georgia on May 5, 2007. The shallow (170m) Node represents the terminus of the 39 km of fibre optic cable laid in the Strait of Georgia, with a second (deep) Node to the west on the 300m isobath. The cable makes a shore landing at the south-east end of the Iona Causeway. See inside for a complete story on the cable lay. Photo by Patrick McFadden

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In particular, we acknowledge Gail Anderson, Colin Bradley, Maycira Costa, John Dower, Phil Hill, Kim Juniper, Anna Metaxas, Rich Pawlowicz, Tom Pedersen, Joerg Sander, Paul Snelgrove, Phillipe Tortell, Svein Vagle, Frank Whitney, Richard Keeler and Martin Taylor – among many others.

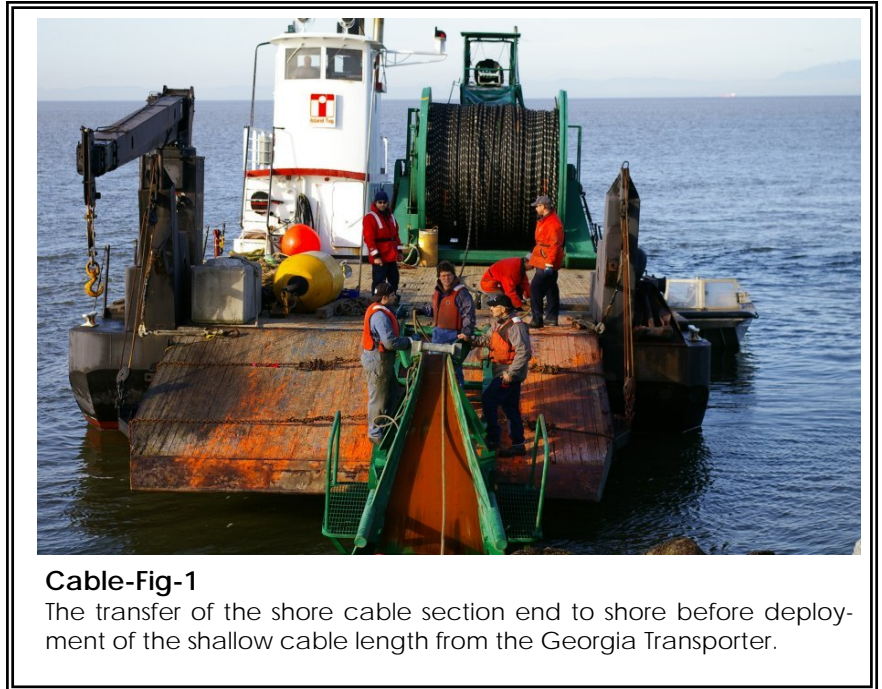
We are, indeed, operational. Saanich continues to supply a richness of information from some very stable instruments. We remain focussed on the completion of Strait of Georgia but look forward to some less ‘volatile’ intervals starting late 2007 when we can take a careful look at operations and services to researchers.

Laying the Strait of Georgia Cable: May & June 2007

By Richard Dewey

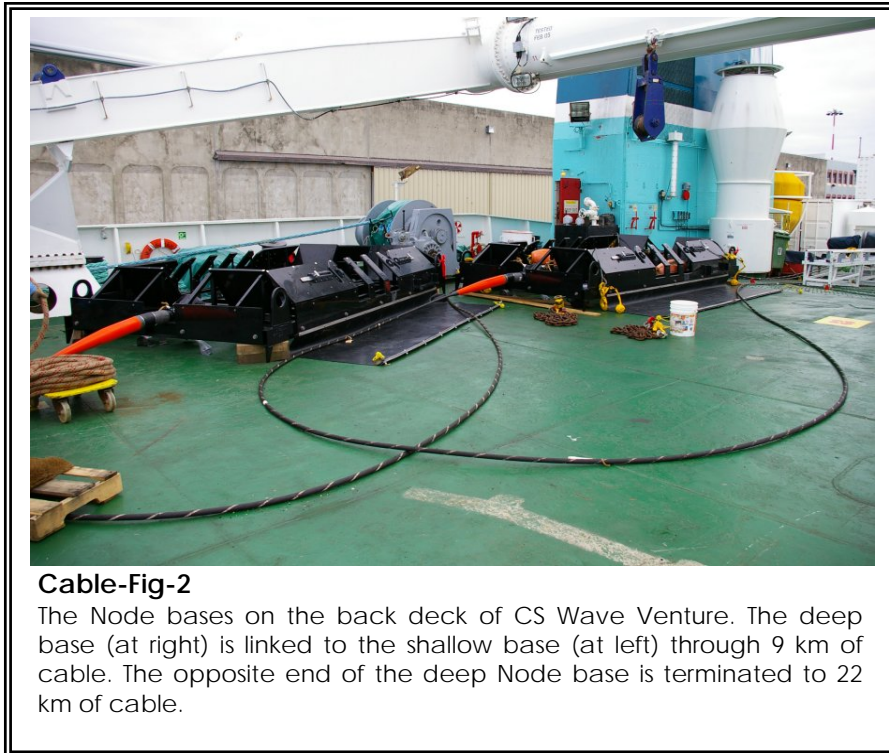
During the first week of May and the second week of June (2007), the back-bone cable for the Strait of Georgia array was deployed. The operation involved three separate cable lay stages, including the initial deployment of the shore section from a barge, the attachment and deployment of thirty kilometers of cable and two node bases in the central Strait from the Cable Ship Wave Venture, and the final placement and termination of the fore-shore section to the site of the future Strait of Georgia shore station.

The first task was loading 8.6 kilometers of double and single armoured fibre optic cable stored at Ogden Point onto the Georgia Transporter barge. The cable weighs approximately 1 ton per kilometer. The Georgia Transporter then transited to the Iona Causeway, where the “bitter” end was transferred to shore (Cable-Fig-1).



Cable-Fig-1

The transfer of the shore cable section end to shore before deployment of the shallow cable length from the Georgia Transporter.



Cable-Fig-2

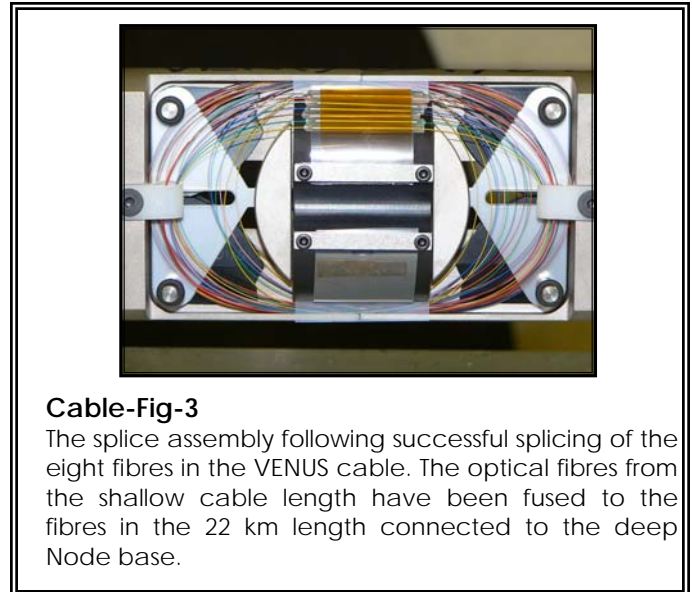
The Node bases on the back deck of CS Wave Venture. The deep base (at right) is linked to the shallow base (at left) through 9 km of cable. The opposite end of the deep Node base is terminated to 22 km of cable.

Testing of the optical continuity of each of the 8 fibres during the subsequent splice and lay operations would take place from a vehicle parked on the Causeway. The Georgia Transporter carefully laid the shallow water section of the cable out to the 100m isobath. A marker buoy was deployed at this deep end of the shore section, to be recovered by the CS Wave Venture.

The Node bases were delivered from Ocean Works International in North Vancouver to the CS Wave Venture at Ogden Point. Here on the aft deck (Cable-Fig-2), the deep sections of the cable were attached to the Node bases. A 22 km section of light armoured fibre optic cable was attached to the “deep” Node base, and 9 km of similar cable was used to join the “deep” and “shallow” Node bases. In an attempt to minimize sediment scouring along the sides of the Nodes in the strong tidal currents of the Strait of Georgia, rubber “skirts” were

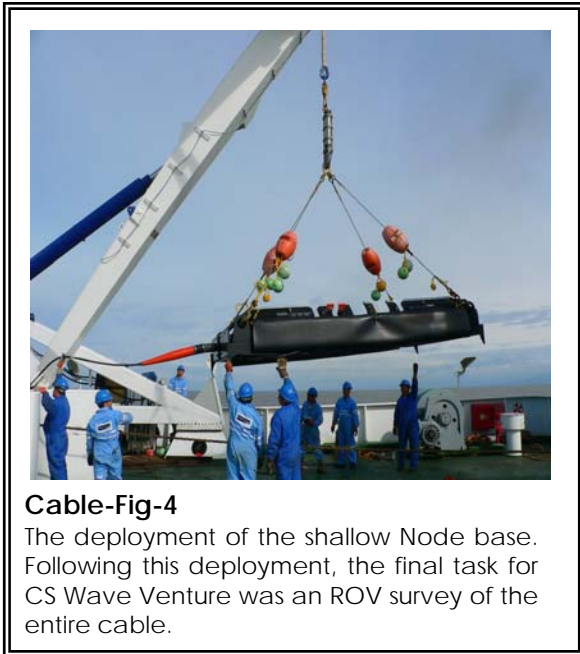
added to the sides of the Node bases. These will be unfurled by ROPOS when the Node pods are deployed and placed into the Node bases in September.

The CS Wave Venture then sailed from Victoria to the Strait of Georgia, where the buoy and the deep end of the shore cable were recovered. The main cable was then “spliced” to the shore section. Shown in Figure 3 (Cable-Fig-3) is the core of the splice with the 8 fused fibre threads. Optical transmission testing from shore (Iona Causeway) confirmed that losses across each splice were within the accepted tolerance of less than -0.2 db. The splice was then sealed into an industry standard UJ (Universal Joint), which has the full 10 ton strength capacity of the cable.



Cable-Fig-3

The splice assembly following successful splicing of the eight fibres in the VENUS cable. The optical fibres from the shallow cable length have been fused to the fibres in the 22 km length connected to the deep Node base.

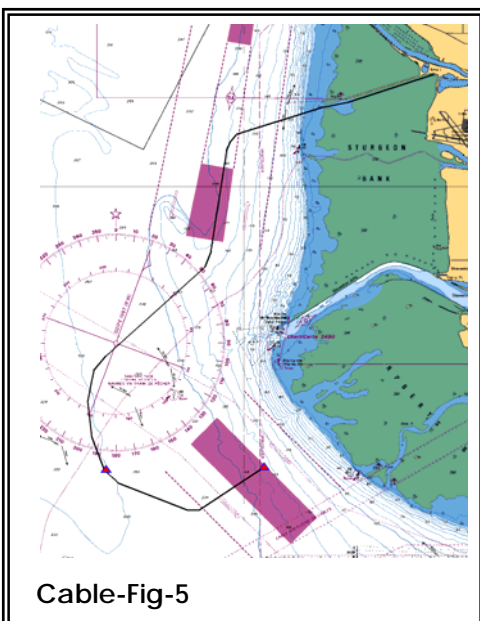


Cable-Fig-4

The deployment of the shallow Node base. Following this deployment, the final task for CS Wave Venture was an ROV survey of the entire cable.

From off the end of the Iona Causeway, the CS Wave Venture slowly laid out the full length of the Strait of Georgia cable. At the 30.6 km point, the “deep” (300m) Node base was lowered into the water in the early hours of the May 5, 2007. Later that morning, the “shallow” Node base, representing the end of the array was lifted off the deck and lowered onto the bottom (170m) (Cable-Fig-4). Once the Node bases were on the bottom, a final set of optical continuity tests was performed.

The final task for the CS Wave Venture was a complete visual cable survey using their industrial ROV. The ROV also recovered the Node base “slings” used during deployment. Shown in Figure 5 is the approximate cable route for the Strait of Georgia array. The final stage of the cable lay operations concluded the week of June 11, when the shore section was brought up to the eastern end of the Iona Causeway, and set ashore at the site of the VENUS SoG Shore Station. The sea-water return anode was also deployed at this time. The Node pods and instruments will be deployed and connected in September and October, 2007. For additional photos and system status, visit the VENUS web site at www.venus.uvic.ca.



Cable-Fig-5

The installation of the Strait of Georgia cable took place far earlier than originally planned due to changes in the availability of the CS Wave Venture. Meeting this new timeline required considerable effort from Ocean Works, ODI and CANPAC Divers/Island Tug and Barge. The Project would like to thank our partners and recognize all the hours and “stomach acid” that was expended to bring the deployment to a successful conclusion.

For more cabled observatory news from the University of Victoria, please see visit Neptune Canada at www.neptunecanada.ca/news/index.html

