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The Oregon Fishermen's Cable Committee Inc. is an organization of trawl fishermen and representatives from companies that operate fiber optic cables off the Oregon coast. Membership is free of charge and open to all west coast trawl fishermen that have either a west coast federal groundfish permit or an Oregon, Washington or California Pink Shrimp permit. Members that follow operating protocols receive replacement gear and compensation for lost time and catch if asked to sacrifice fishing gear to protect an undersea cable. In addition, such members may receive a release of liability for accidental damage to an undersea cable. Members also are eligible to participate in drawings for patrol vessel charter opportunities during undersea cable installations.

The OFCC tries to monitor an email address and phone number for use in a submarine cable emergency:

OFCC: **911@ofcc.com**
Scott McMullen **(503) 440-3569**

Emergency Contacts for Possible Cable Hang-ups

CABLE	EMERGENCY EMAIL	CABLE OWNER	EMERGENCY #
<i>When you can't call the Emergency #</i>			
AUFS-W	nocc2@gci.com	GCI	(888) 442-8662
TGN SEGMENT 1	nmcwall@tatacommunications.com	TATA	(732) 282-4001
TGN SEGMENT 5		TATA	
TGN SEGMENT 6		TATA	
RSN SEG 1,2,3 & 4	ooi-ofcc@uw.edu	OCEAN LEADERSHIP	(855) 665-1424
RSN SEG 5		OCEAN LEADERSHIP	
NORTHSTAR	acscsnocc@acsalaska.com	ACS	(888) 734-1888
AKORN		ACS	
TRANS-PACIFIC EXPRESS (TPE)	acscsnocc@acsalaska.com	VERIZON	(888) 734-1888
SOUTHERN CROSS	acscsnocc@acsalaska.com	VERIZON	
China-US		AT&T	(866) 466-2288,
TPC-5		AT&T	prompt 5
FASTER	FASTER-NOC@kddia.com	GOOGLE	(877) 520-0800

OREGON FISHERMEN'S CABLE COMMITTEE, INC.®

February, 2017
 Volume 4, Issue 1



UNDERSEA CABLE UPDATE

New Cross Pacific Cable to be Installed in April

Cable installation activities are expected to begin off the Oregon coast in April, 2017 (tentatively April 11-23) for the NCP cable. It is slated to be ready for service at the end of 2017. It will span more than 7,000 nm -- extending from Pacific City to Japan, Korea, two points in China, and Taiwan. It is a new generation high capacity fiber-optic submarine cable system with a capacity up to 80 Terabits per second (Tbps). Microsoft is the U.S. landing party and a partner for the NCP Consortium that includes Chunghwa Telecom, KT Corporation, China Telecom, China Mobile, and China Unicom. TE SubCom is the supplier, providing the infrastructure necessary. Microsoft joined the OFCC in March 2016.

equipment needs to be in good working order and on board prior to mobilization. Patrol vessel charters are usually 10 days and the rate is typically \$57.50/foot/day up to a maximum of \$4887.50 per day (85 ft).

To become a member, the owner or captain of a trawler signs an *Individual Fisherman's Agreement (IFA)* form on behalf of the vessel. There is no cost or fee. Every vessel that has a West Coast Federal Groundfish permit, or an Oregon, Washington, or California Shrimp permit is eligible. If a member vessel wishes to be included in the patrol boat drawings, the *Patrol Boat Statement of Interest* needs to be submitted. To become a member or for more information, call (503) 325-2285 or email us at: ofcc@ofcc.com.

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OFCC member vessels will be needed for patrol and guard boat services during the installation process. Member vessels that have submitted a Statement of Interest are entered in a random drawing for each cable project. Vessels must be in seaworthy condition as determined by the OFCC and required

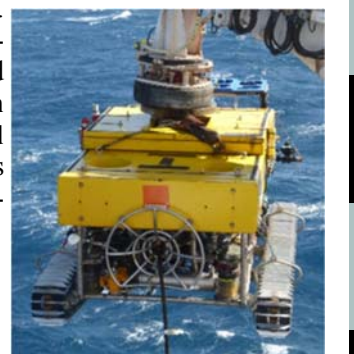


OFCC Version 8.1 Thumb Drives are available – same as Version 8.0 but with OLEX update. They also include plotter info for Maptech, Coastal Explorer, P-Sea WindPlot, ECC-Globe, and Nobeltec. Next version should be coming out this summer.

Regional Scale Nodes (RSN) Cable Inspections

The Ocean Observatories Initiative (OOI) RSN cables are due for their 5-year inspections to confirm the burial condition of the cables. OFCC agreements call for the first inspection after a cable has been installed for 5 years and if no change is found, every eight years thereafter. The dates of the inspection are subject to the availability of a cables ship. The cables ship will have a Remote Operated Vehicle (ROV) that will dive at multiple sites on both cables. The ROV will have still and video cameras and a tool to calculate the depth of burial of cable that is not visible.

the cable, the vessel will have an ROV sub on the seabed and will likely be moving at less than 1/2 knot. Generally, trawlers will be asked to **give a 1 nm clearance around the ship** when it is conducting underwater operations.



Remote Operated Vehicle (ROV)

Due to the nature of the work, guard or patrol vessels will not be needed. While inspecting

2017 Port Meetings

TRAWLER CAPTAINS AND CREW (Draggers, Shrimpers & Whiting Fleet)

You are invited to an OFCC Luncheon Meeting at any of the following locations:

Brookings	Sebastian's Restaurant	Wed.	March 1
Charleston	Charleston Marina RV Park	Thurs.	March 2
Newport	Englund Marine Supply	Fri.	March 3
Westport, WA	Ocean Gold HR Dept. (Old Fun Center—1601 Yearout Dr.)	Mon.	March 6
Warrenton	El Compadre Restaurant	Fri.	March 10
Seattle	NWFSC Montlake Auditorium (Before NOAA Pre-Season Hake Industry Mtg.)	late Apr/early May	

All meetings will start at noon -- Lunch is provided.

Enter drawings for \$300, \$200, and \$100 gift cards from **Cabela's** and **Englund Marine Supply**—drawing held after May meeting. Information on the Google cable installed in the summer of 2015 and new cable projects going in this year will be shared at each meeting, which last about 45 minutes.



2016 Port Meeting Winners:

Tony Pettis, F/V Heidi Sue, \$100 Cabela's card
 Rich Brown, F/V Calimari, \$200 Englund Marine card
 Scott Hartzel, F/V Ossian, \$300 Cabela's card
 Brett Hearne, F/V Last Straw, GPS EPIRB, donated by **Viking Life Saving Equipment** of Seattle

We thank Joanne Morris, Technical Program Manager from Google, for joining us at Newport, Westport, and Warrenton Port Meetings in 2016. At all the 2016 Port Meetings, Google gave away t-shirts.

FASTER Cable Completed

The OFCC and Google began working on a route for the FASTER cable in July 2014. As part of this process, Google and OFCC reps worked with fishermen on their trawlers in Charleston to design the route to maximize burial in the fishing grounds by using the local knowledge of the trawl fleet. This was highly effective, as the route resulted in good burial through the trawl fishing grounds out to over 800 fms. Google, and the other cable companies, have seen benefits from working closely with the OFCC.

With construction and end-to-end testing complete, a new trans-Pacific submarine cable system, the "FASTER Cable System," started service on June 30, 2016. Construction of the system was announced in August 2014. The 4860 nm trans-Pacific cable lands in Oregon near Bandon and has two landing points in Japan. On the West Coast of the U.S., the system has extended connections from the landing point in Bandon to Los Angeles, the San Francisco area, Portland and Seattle. In Asia, FASTER has connectivity to many neighboring cable systems, extending its capacity beyond Japan to other Asian locations.

This six-fiber pair cable has an initial design capacity of 60 Terabits per second (Tbps). Google joined the OFCC in November, 2014.



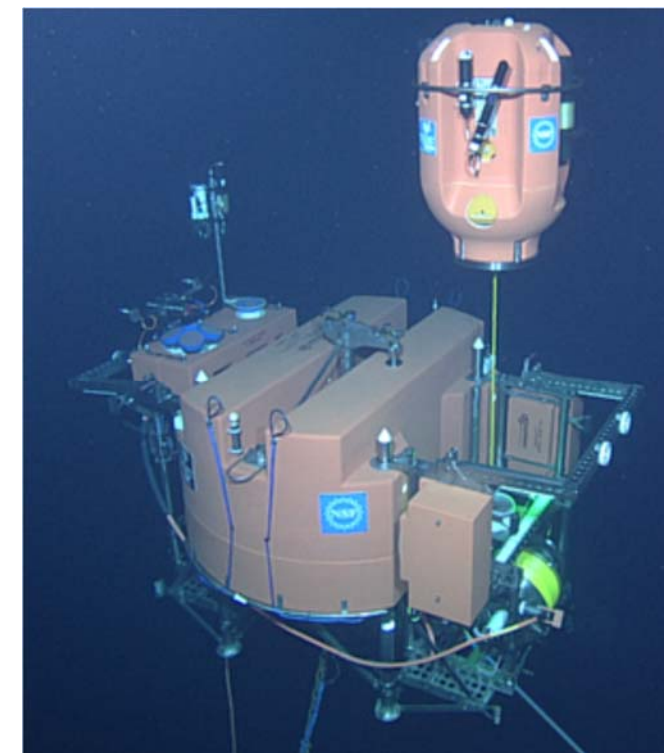
Brett Hearne with prize GPS EPIRB

Hawaiki Submarine Cable

Hawaiki Submarine Cable USA LLC joined the OFCC on October 14, 2016, becoming the eighth submarine cable owner, joining General Communications, Inc. (GCI), Alaska Communications (ACS), Verizon, Tata Communications, The Consortium for Ocean Leadership, GU Holdings Inc. (Google), and Microsoft Infrastructure Group, LLC. The Hawaiki submarine cable will land in Pacific City, Oregon and cross the Pacific Ocean to Oahu, Hawaii, New Zealand and Australia—7,170 nm from Oregon to Australia. The cable has a design capacity of 42 Tbps, and is expected to be ready for service in June of 2018. **The installation activities off Oregon will take place in late summer of 2017.** Hawaiki worked with the Oregon fishing industry to get the best route crossing the shelf and slope.



RSN Ocean Observatory Sending Data



The waters off the Oregon coast are now among a handful of places in the world with a cabled undersea observatory that is constantly delivering scientific data back to shore. The OOI-RSN cables connect six research locations off Oregon to schools, researchers, and the public. The funding for this project comes from the National Science Foundation, and one of their requirements for the system is that information collected be publicly available. Instruments and moorings have been deployed on the seabed and, at a few sites, in the water column. Some of the instruments are winched up and down the water column nine times a day sampling and monitoring the water. The

system is designed so that every summer some scientific instruments can be replaced using Remote Operated Vehicles (ROVs) that can 'plug in' new instruments into the junction boxes on the seafloor. We have been asking for a "Fishermen's Web Page" with information of interest to the fishing industry such as surface and bottom current speed and direction, sea temperatures, thermoclines etc.



Float shown in top right of photo to left.

One of the cables starts at Pacific City and ends at Axial Seamount, 250 nm west of Tillamook Head. Axial is an active volcano, with high temperature water vents, "smoker chimneys" and recent lava flows in 2011 and 2015. Among the instruments at this site are video cameras, seismometers, biological sensors and devices that measure the chemical make-up of the water. Every three hours a video camera streams live (<http://oceanobservatories.org/streaming-underwater-video/>) from the Axial Seamount caldera location, showing a deep-sea hot water vent/chimney covered with plants and animals that have adapted to the high water temperature.

The RSN Cable is part of a bigger project called Ocean Observatories Initiative (OOI), with multiple sites in various parts of the world. The OOI will monitor reference sites over the long term, even hoping to help improve storm forecasting. For more information see these web-sites:

<http://oceanobservatories.org/>
<http://www.interactiveoceans.washington.edu/>